Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	2652	imag$4 same map$5 same register$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/26 17:08
S2	203147	"11" same rotation translat$4 same compression same expansion	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/03/16 10:57
S3	491	S1 same rotation translat$4 same compression same expansion	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/03/16 10:57
S4	0	S1 same rotation same translat$4 same compression same expansion	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/03/16 11:06
S5	193	imag$4 same registra$4 same (translat$4 or rotat$4) same position$4 same relation$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/03/16 11:07
S6	21	S5 and medical	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/03/16 11:11
S7	557	(382/131).CCLS.	US-PGPUB; USPAT; IBM_TDB	OR	OFF	2005/03/16 11:12
S8	104	S7 and (imag$4 same registrat$4)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/03/16 11:12
S9	76	S8 and rota$7	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/03/16 11:12
S10	69	S9 and position$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/03/16 11:13
S11	46	S10 and translat$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/03/16 11:13
S12	36	S11 and map$5	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/03/22 13:46
S13	147	epipolar near2 geometry	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/03/22 13:47
S14	122	S13 same imag$5	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/03/22 13:47
S15	31	S14 same (motion (optial near1 flow))	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/03/22 13:52

S16	33	S14 same (motion (optical near1 flow))	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/03/22 14:05
S17	2	S13 same sparse	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/26 17:12
S18	1	"09/993061"	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/03/22 14:27
S19	1	S18 and geometry	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/03/22 14:27
S20	223	fundamental near1 matrix	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/26 17:08
S21	119	S20 and optical	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/26 17:08
S22	78	S21 and flow	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/26 17:08
S23	23	S22 and median	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/26 17:08
S24	4776	optical near2 flow	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/26 17:13
S25	313	S24 same sequenc$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/26 17:13
S26	2	S25 same (point near2 matches)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/26 17:14
S27	2	S25 same (point near2 matches)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/26 17:16
S28	173	epipolar same geometry	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/26 17:18
S29	43	S28 same ((optical near1 flow) (motion))	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/27 12:16
S30	1	("6353678").PN.	US-PGPUB; USPAT; IBM_TDB	OR	OFF	2005/11/03 12:06
S31	1	S30 and median	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/27 13:42

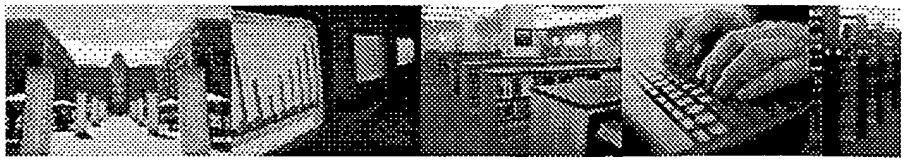
S32	1	S30 and epipolar	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/27 14:00
S33	1	S30 and sparse	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/27 14:03
S34	1	S30 and fundamental	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/27 14:27
S35	1	S30 and least	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/27 14:11
S36	1	S30 and robust	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/27 14:24
S37	1	S30 and dense	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/27 14:32
S38	1	S30 and video	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/27 14:37
S39	1	S30 and vector	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/27 14:42
S40	1	S30 and line	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/04/27 14:42
S41	1	("6353678").PN.	US-PGPUB; USPAT; IBM_TDB	OR	OFF	2005/11/02 13:03
S42	1	("6353678").PN.	US-PGPUB; USPAT; IBM_TDB	OR	OFF	2005/11/02 16:06
S43	1	S42 and optical	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 14:39
S44	1	S42 and pixel	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 14:41
S45	1	S42 and comput$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 15:30
S46	2590	optical near1 flow	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 16:38
S47	240	S46 same imag$4 same sequenc$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 15:31

S48	7	S47 same epipolar	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 16:39
S49	36	S46 same median	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 15:33
S50	1	S42 and median	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 16:13
S51	175	epipolar near1 geometry	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 16:14
S52	119	S51 same point	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 16:14
S53	34	S52 same pixel	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 16:14
S54	0	S53 same median	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 16:15
S55	1	S53 same least	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 16:18
S56	1	S55 and median	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 16:21
S57	0	sparse near1 optical near1 flow]	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 16:21
S58	3	sparse near1 optical near1 flow	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 16:22
S59	310	optical near1 flow near4 comput$5	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 16:42
S60	1	S59 same epipolar	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 16:39
S61	0	S59 same (each near1 pixel)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 16:42
S62	93	S59 same (pixel)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 16:47
S63	9	S62 same (median middle)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/02 16:47

S64	1	("6353678").PN.	US-PGPUB; USPAT; IBM_TDB	OR	OFF	2005/11/03 12:06
S65	1	S64 and (optical flow velocity)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 12:16
S66	1	S64 and motion	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 12:28
S67	251	fundamental near1 matrix	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 12:28
S68	89	S67 same imag$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 12:29
S69	18	S68 same optical	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 12:29
S70	7	S69 same flow	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 12:37
S71	0	epipolar near2 geometry near2 "constraint."	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 12:37
S72	13	epipolar near2 geometry near2 constraint	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 12:43
S73	1	S64 and square	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 12:58
S74	1	S64 and least	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 13:06
S75	1	S64 and (fundamental)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 14:25
S76	0	S64 and velocity	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 14:25
S77	1	S64 and optical	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 14:39
S78	1	S64 and optical	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 15:18
S79	1	S64 and epipolar	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 14:43

S80	1	S64 and least	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 15:31
S81	1	S64 and (fundamental)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 15:45
S82	1	S64 and (planar near1 homography)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 15:33
S83	1	S64 and (sparse)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 16:03
S84	1	S64 and (robust)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 16:42
S85	0	funomental near matrix near7 imag$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 16:43
S86	67	fundamental near3 matrix near7 imag$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 16:43
S87	53	S86 and optical	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 16:43
S88	14	S86 and (optical near1 flow)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2005/11/03 16:44

Scientific & Technical Information Center



Database Search Request Confirmation

Thank you, BARRY CHOOBIN. Your request (shown below) has been successf

Your name: **BARRY CHOOBIN**
Email address: **BARRY.CHOOBIN@USPTO.GOV**
Employee number: **77677**
Art Unit: **2623**
Office Location: **NOX9D75**
Phone Number: **571-272-7447**
Maibox Number :

Case serial number: **09993061**
Class / Subclass(es): **382/107**
Earliest Priority Filing Date: **11/05/2001**
Format preferred for results: **Paper**
Search Topic Information:
OPTICAL FLOW COMPUT* PIXEL EPIPOLAR GEOMETRY
Special Instructions and Other Comments:

Submit comments and suggestions to Kristin Vajs To report technical prc

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305-9000 (Crystal City) for installation assistance.

STIC Search Report
EIC 2600

STIC Database Tracking Number: 170247

TO:	From:
Mahmood Choobin **Location: knx 09 D75** **Art Unit : 2623** **Monday, November 07, 2005** **Case Serial Number: 09/993061**	**Paul Obiniyi** **Location: EIC 2600** **KNX 08 B55** **Phone: 305-1836** **paul.obiniyi@uspto.gov**

Search Notes

Dear Examiner Choobin,

Attached please find the results of your search. Please feel free to contact me if you have additional questions or would like a re-focus search. Thank you and have a great day.

Paul

RUSH SPE SIGNATURE _____ Access DB# 170747

SEARCH REQUEST FORM

Scientific and Technical Information Center

EIC 2600

Requester's Full Name M. Chaudhri Examiner # 77677 Date 11-4-05

Art Unit 2623 Phone Number _____ Serial Number 09/993061

Office Location KNX 9075 Format preferred (circle) PAPER EMAIL BOTH

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Let us know what you already have and so do not need. Include the keywords, synonyms and meaning of acronyms. Define all terms that may have a specific meaning. Please attach a copy of the background, abstract, claims and other pertinent information.
Please state how the terms or keyword strings should relate to one another.

Title of the Invention _____

Inventor(s)

_____

_____

Earliest Priority date to be used _____

****

STAFF USE ONLY

Searcher Paul Obiny

Phone 27734

Location KNX 08 B55

Date picked up 11/04/05

Date completed 11/09/05

Search Prep/review 50

Online Time 165

TYPE of Search

Text ✓

Litigation ____

Other ✓

Databases Searched

Dialog ✓

STN ____

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LEXIS/NEXIS ____

Courtlink ____

Other WWW Research Index

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? show files; ds; save temp; logoff hold
File 344:Chinese Patents Abs Aug 1985-2005/May
         (c) 2005 European Patent Office
File 347:JAPIO Nov 1976-2005/Jul(Updated 051102)
         (c) 2005 JPO & JAPIO
File 350:Derwent WPIX 1963-2005/UD,UM &UP=200571
         (c) 2005  Thomson Derwent
File 371:French Patents 1961-2002/BOPI 200209
         (c) 2002 INPI.  All rts. reserv.

Set     Items   Description
S1        192   (COMPUT? OR CALCULAT? OR ADD?)(3N)OPTICAL?(3N)FLOW
S2      10607   (IMAGE?? OR PICTURE?? OR JPEG?? OR PHOTO?? OR GIF?? OR VID-
             EO OR PHOTOGRAPH??)(5N)SEQUENCE? ?
S3       2646   POINT(5N)MATCH???
S4         17   (EPIPOLAR OR EPI()POLAR)(5N)GEOMETR?
S5         57   (MIDDLE OR MEDIAN OR MID OR AVERAGE OR MEAN OR MEDIUM OR M-
               IDPOINT OR INTERMEDIATE)(7N)(OPTICAL(3N)FLOW?)
S6         46   FUNDAMENTAL(3N)MATRI???
S7        119   AU=(TRAJKOV,  M? OR  TRAJKOVIC M)
S8     210685   IC=G06K?
S9         38   S8 AND S7
S10         1   S9 AND S4
S11        10   S1 AND S2
S12         9   S11 NOT S10
S13         5   S4 AND S8
S14         5   S13 NOT S12
S15         0   S3 AND S5
S16         0   S5 AND S6
S17         1   S1 AND S6
S18         0   S17 NOT (S14 OR S12)
```

10/3,K/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015625509 **Image available**
WPI Acc No: 2003-687680/200365
XRPX Acc No: N03-549309
Optical flow computing system for video system, has image processor that derives epipolar geometry **for images from point matches included between images and computes optical flow for each pixel of images**
Patent Assignee: KONINK PHILIPS ELECTRONICS NV (PHIG)
Inventor: **TRAJKOVIC M**
Number of Countries: 028 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20030086590	A1	20030508	US 2001993061	A	20011105	200365	B
WO 200341015	A1	20030515	WO 2002IB4069	A	20021002	200365	
EP 1444656	A1	20040811	EP 2002767806	A	20021002	200452	
			WO 2002IB4069	A	20021002		
KR 2004060970	A	20040706	KR 2004706778	A	20040504	200472	
CN 1582460	A	20050216	CN 2002821847	A	20021002	200535	

Priority Applications (No Type Date): US 2001993061 A 20011105
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030086590	A1		9	G06K-009/00	
WO 200341015	A1	E		G06T-007/20	
Designated States (National): CN JP KR					
Designated States (Regional): AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR					
EP 1444656	A1	E		G06T-007/20	Based on patent WO 200341015
Designated States (Regional): AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR					
KR 2004060970	A			G06T-001/00	
CN 1582460	A			G06T-007/20	

Optical flow computing system for video system, has image processor that derives epipolar geometry **for images from point matches included between images and computes optical flow for each pixel...**
Inventor: **TRAJKOVIC M**

Abstract (Basic):
... The system has an image processor (104), which derives **epipolar geometry** for the images from point matches that are included between the images. The processor computes...

...of the images under a constraint that are derived from a fundamental matrix for the **epipolar geometry**0 .
... The **epipolar geometry** constraint provides improved accuracy and performance in computing optical flow...

...block diagram of a video system employing a method of computing optical flow under an **epipolar geometry** constraint...
International Patent Class (Main): **G06K-009/00** ...
?

12/3,K/1 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

016817926 **Image available**
WPI Acc No: 2005-142209/200515
XRPX Acc No: N05-120983

Optical flow estimation method for video processing, updating confidence map data determined from primary frame data blocks of encoded image data, based on smooth motion field data blocks derived from secondary frame data blocks

Patent Assignee: QUEEN MARY & WESTFIELD COLLEGE (UNLO)
Inventor: COIMBRA M; DAVIES M E
Number of Countries: 108 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200506762	A2	20050120	WO 2004EP51325	A	20040701	200515	B

Priority Applications (No Type Date): GB 200315412 A 20030702
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200506762	A2	E	27	H04N-007/26	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

Abstract (Basic):

... 2) **computer** readable recording medium for storing **optical flow** estimation program...

...The figure shows the pictorial representation of **image sequence** of MPEG-2 encoded **video** data stream...

12/3,K/2 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

015998307 **Image available**
WPI Acc No: 2004-156157/200415
XRPX Acc No: N04-125040

Movable subject image quality optimizing method for microscope, involves identifying trajectory for each pixel of image from displacement vector fields, and applying operation to image data along trajectory

Patent Assignee: LEICA MICROSYSTEMS HEIDELBERG GMBH (LEIC-N); OLSCHEWSKI F (OLSC-I)
Inventor: OLSCHEWSKI F
Number of Countries: 002 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20040022449	A1	20040205	US 2003632499	A	20030801	200415	B
DE 10235657	A1	20040212	DE 1035657	A	20020802	200415	

Priority Applications (No Type Date): DE 1035657 A 20020802
Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
US 20040022449 A1 10 G06K-009/40
DE 10235657 A1 G06T-005/50
Abstract (Basic):
... a) an arrangement for optimizing the **image** quality of **image sequences** of movable subjects acquired with a microscope...

...b) a software causes a microscope system to carryout a method of optimizing the **image** quality of **image sequences** of movable subjects acquired with a microscope...

...Used for optimizing the **image** quality of **image sequence** of movable subject acquired with a microscope...

...The drawing shows a block diagram of a method of optimizing the **image** quality of **image sequences** of movable subjects acquired with a microscope...

... **Optical flow calculator** (53

12/3,K/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015875033 **Image available**
WPI Acc No: 2004-032864/200403
XRPX Acc No: N04-025962
Optical flow computing **method used in image processing method, determines optical flow by enforcing optical flow consistency constraint between two image frames**
Patent Assignee: SARNOFF CORP (SARN-N)
Inventor: SAWHNEY H; ZHAO W; SAWHNEY H S
Number of Countries: 034 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20030213892	A1	20031120	US 2002381506	P	20020517	200403	B
			US 2003440966	A	20030519		
WO 200398402	A2	20031127	WO 2003US16085	A	20030519	200404	
EP 1506471	A2	20050216	EP 2003753117	A	20030519	200513	
			WO 2003US16085	A	20030519		
JP 2005526318	W	20050902	WO 2003US16085	A	20030519	200559	
			JP 2004505852	A	20030519		

Priority Applications (No Type Date): US 2002381506 P 20020517; US 2003440966 A 20030519
Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
US 20030213892 A1 13 H01L-027/00 Provisional application US 2002381506

WO 200398402 A2 E G06F-000/00
Designated States (National): IL JP
Designated States (Regional): AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE SI SK TR
EP 1506471 A2 E G06F-001/00 Based on patent WO 200398402
Designated States (Regional): AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR

JP 2005526318 W 15 G06T-007/20 Based on patent WO 200398402

Optical flow computing **method used in image processing method, determines optical flow by enforcing optical flow consistency constraint** ...

Abstract (Basic):
... An INDEPENDENT CLAIM is also included for apparatus for **computing optical flow** .
...

...Used in optical flow image processing method for detecting salient motion in **image sequence** or for super resolution **image** reconstruction

12/3,K/4 **(Item** 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

015833343 **Image available**
WPI Acc No: 2003-895547/200382
XRPX Acc No: N03-714491
Image motion vector field generation apparatus for processing video data, calculates optical flow from image frames input to frame memories, using specific interactive formulae
Patent Assignee: DIGITAL VIDEO EXPRESS LP (DIGI-N)
Inventor: IU S; LIN Y
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6628715	B1	20030930	US 99116001	P	19990115	200382	B
			US 2000484039	A	20000118		

Priority Applications (No Type Date): US 99116001 P 19990115; US 2000484039 A 20000118
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6628715	B1		18	H04N-007/12	Provisional application US 99116001

Image motion vector field generation apparatus for processing video data, calculates optical flow from image frames input to frame memories, using specific interactive formulae

Abstract (Basic):
... The frame memories (612,614) receive image frames (602;604) respectively. A **calculator** (600) **calculates optical flow** from the image frames using specific iterative formulae for X and Y image velocity estimates...
... processing and applications, such as motion compensation coding of digital television (TV), noise reduction for **video sequences** , frame rate conversion and target tracking, for the recovery of three-dimensional motion and structure...

... **optical flow calculator** (600

12/3,K/5 **(Item 5 from file: 350)**

DIALOG(R)File 350:Derwent WPIX
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015219640 **Image available**
WPI Acc No: 2003-280552/200328
XRPX Acc No: N03-222696
Moving object detection using e.g. a camera, which detects optical flow segments indicative of loci of moving objects moved in a moving picture sequence
Patent Assignee: MATSUSHITA ELECTRIC IND CO LTD (MATU); MATSUSHITA DENKI SANGYO KK (MATU); FUJII H (FUJI-I)
Inventor: FUJII H
Number of Countries: 033 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 1282077	A2	20030205	EP 200216243	A	20020722	200328	B
CA 2396233	A1	20030131	CA 2396233	A	20020730	200328	
JP 2003044861	A	20030214	JP 2001232667	A	20010731	200328	
US 20030025794	A1	20030206	US 2002201442	A	20020723	200328	
US 6956603	B2	20051018	US 2002201442	A	20020723	200568	

Priority Applications (No Type Date): JP 2001232667 A 20010731
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 1282077	A2	E	36	G06T-007/20	
Designated States (Regional): AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR					
CA 2396233	A1	E			
JP 2003044861	A		10	G06T-007/20	
US 20030025794	A1			H04N-005/225	
US 6956603	B2			H04N-007/18	

... **which detects optical flow segments indicative of loci of moving objects moved in a moving** picture sequence

Abstract (Basic):
... filtered optical flow segments indicative of loci of moving objects apparently moved in the moving **picture sequence** in the time interval. The filtered **optical flow** segments generated are **added** to the previous **optical flow** segments detected to generate integrated **optical flow** segments indicative of loci of moving objects.

12/3,K/6 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

015123844 **Image available**
WPI Acc No: 2003-184367/200318
XRPX Acc No: N03-145185
Motion estimation in image processing apparatus provided with motion estimation unit to calculate optical flow **in** sequence **of** video images
Patent Assignee: KONINK PHILIPS ELECTRONICS NV (PHIG); LUNTER G A (LUNT-I)
Inventor: LUNTER G A
Number of Countries: 024 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200307618	A2	20030123	WO 2002IB2461	A	20020621	200318 B
KR 2003029966	A	20030416	KR 2003703527	A	20030310	200353
EP 1440581	A2	20040728	EP 2002738517	A	20020621	200449
			WO 2002IB2461	A	20020621	
US 20040190623	A1	20040930	WO 2002IB2461	A	20020621	200465
			US 2004483024	A	20040106	
JP 2004537112	W	20041209	WO 2002IB2461	A	20020621	200481
			JP 2003513252	A	20020621	

Priority Applications (No Type Date): EP 2001202641 A 20010710
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200307618	A2	E	11	H04N-007/26	

Designated States (National): CN JP KR US
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

KR 2003029966	A		H04N-007/32	
EP 1440581	A2	E	H04N-007/26	Based on patent WO 200307618

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

US 20040190623	A1		H04N-007/12	
JP 2004537112	W	37	G06T-007/20	Based on patent WO 200307618

Motion estimation in image processing apparatus provided with motion estimation unit to calculate optical flow **in** sequence **of** video images

12/3,K/7 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

014540801 **Image available**
WPI Acc No: 2002-361504/200239
XRPX Acc No: N02-282547
Video coding face movement by estimating translation and rotation from feature points and estimated spatio-temporal rates using least mean square estimation
Patent Assignee: INDIAN INST TECHNOLOGY (INTE-N); INTEL CORP (ITLC)
Inventor: SENTUPTA S; SURYANARAYANA R
Number of Countries: 096 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200203709	A2	20020110	WO 2001US20115	A	20010621	200239 B
AU 200168713	A	20020114	AU 200168713	A	20010621	200239

Priority Applications (No Type Date): US 2000608989 A 20000630
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200203709	A2	E	22	H04N-007/26	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200168713	A		H04N-007/26	Based on patent WO 200203709

Abstract (Basic):

... image of the face, estimating spatio-temporal rates of change in intensity at them using **images** from the **sequence** , estimating translation and rotation of the face and coding them.
... Method is for coding the movement of a head from a **sequence** of **images** .
...

...Method is more accurate and less **computationally** burdensome than the **optical flow** and affine motion model

12/3,K/8 (Item 8 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013098661
WPI Acc No: 2000-270533/200023
XRPX Acc No: N00-202611
Method of employing angle images for measuring object motion in tagged magnetic resonance imaging involves applying pulse sequence to spatially modulate region of interest of object
Patent Assignee: UNIV JOHNS HOPKINS (UYJO)
Inventor: OSMAN N F; PRINCE J L
Number of Countries: 088 Number of Patents: 007
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200009010	A1	20000224	WO 99US17923	A	19990809	200023	B
AU 9953433	A	20000306	AU 9953433	A	19990809	200030	
EP 1104255	A1	20010606	EP 99939077	A	19990809	200133	
			WO 99US17923	A	19990809		
AU 742480	B	20020103	AU 9953433	A	19990809	200209	
JP 2002522146	W	20020723	WO 99US17923	A	19990809	200263	
			JP 2000564518	A	19990809		
US 6453187	B1	20020917	US 98131589	A	19980810	200264	
MX 2001001500	A1	20020501	WO 99US17923	A	19990809	200368	
			MX 20011500	A	20010209		

Priority Applications (No Type Date): US 98131589 A 19980810
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200009010	A1	E	29	A61B-005/055	
Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW					
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW					
AU 9953433	A				Based on patent WO 200009010
EP 1104255	A1	E		A61B-005/055	Based on patent WO 200009010
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					
AU 742480	B			A61B-005/055	Previous Publ. patent AU 9953433
					Based on patent WO 200009010
JP 2002522146	W		29	A61B-005/055	Based on patent WO 200009010
US 6453187	B1			A61B-005/055	
MX 2001001500	A1			A61B-005/055	Based on patent WO 200009010

Abstract (Basic):
... The method employs a SPAMM pulse sequence as the pulse **sequence**

and uses angle **images** to compute directly and automatically planar strain in 2 dimensions or a full strain tensor...

... The angle images may also be employed to **compute** displacement, synthesize tag patterns and **compute optical flow** without requiring the use of regularization...

12/3,K/9 (Item 9 from file: 350)

010674303 **Image available**
WPI Acc No: 1996-171257/199617
XRPX Acc No: N96-143934

Target change between first and second images indicating system - has second device coupled to first device for receiving electrical signal transmitted by first device and third device coupled to second device for digitising electrical signals

Patent Assignee: TEXAS INSTR INC (TEXI)
Inventor: MARKANDEY V; REID A
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5500904	A	19960319	US 92873932	A	19920422	199617	B

Priority Applications (No Type Date): US 92873932 A 19920422
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5500904	A		22	G06K-009/00	

...Abstract (Basic): The system includes a first device for sensing a **sequence** of **images** of the target including the first image, the second image and an additional **image** previous in the **sequence** to the first **image** and the second image. A second device is coupled to the first device for receiving...

...for determining a first processed image in response to assigning a respective weight to each **image** previous in the **sequence** to the second **image** . A fifth device is coupled to the fourth device for indicating a change in the...

...automatically detecting motion of target moving either along ground or through air. Increased accuracy of **optical flow computation** is less sensitive to noise in image data, while indicating change between images in which...

?

14/3,K/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016443831 **Image available**
WPI Acc No: 2004-601747/200458
XRPX Acc No: N04-475742
Object images epipolar geometry **estimating method for e.g. stereo vision processing application, involves transforming points of two images into projective space, and performing nonlinear optimization on fundamental matrix**
Patent Assignee: MICROSOFT CORP (MICT)
Inventor: LOOP C T; ZHANG Z
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6771810	B1	20040803	US 2000594806	A	20000616	200458	B

Priority Applications (No Type Date): US 2000594806 A 20000616
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6771810	B1		13	G06K-009/00	

Object images epipolar geometry **estimating method for e.g. stereo vision processing application, involves transforming points of two images**
...

Abstract (Basic):
... Used for estimating **epipolar geometry** between multiple images of an object for stereo vision processing application and computer vision application...

...The drawing shows an overview block diagram of an **epipolar geometry** estimating method...
International Patent Class (Main): **G06K-009/00**

14/3,K/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016281939 **Image available**
WPI Acc No: 2004-439834/200441
XRPX Acc No: N04-348087
Autonomous vehicle e.g. mobile robot, has computation unit to compute epipolar geometry **information based on orientation information and corresponding points between images, and analysis unit to analyze 3D information of object**
Patent Assignee: SAMSUNG ELECTRONICS CO LTD (SMSU)
Inventor: KWAK J; ROH K; SON Y; KWAK J Y; ROH K S; NOH G S; SOHN Y
Number of Countries: 004 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20040101161	A1	20040527	US 2003427973	A	20030502	200441	B
DE 10326943	A1	20040617	DE 10326943	A	20030605	200441	
FR 2847699	A1	20040528	FR 20036170	A	20030522	200441	
KR 2004044621	A	20040531	KR 200272696	A	20021121	200463	
KR 446636	B	20040904	KR 200272696	A	20021121	200506	

Priority Applications (No Type Date): KR 200272696 A 20021121
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20040101161	A1		14	G06K-009/00	
DE 10326943	A1			G05D-001/02	
FR 2847699	A1			G06T-007/00	
KR 2004044621	A			G06T-015/00	
KR 446636	B			G06T-015/00	Previous Publ. patent KR 2004044621

Autonomous vehicle e.g. mobile robot, has computation unit to compute epipolar geometry **information based on orientation information and corresponding points between images, and analysis unit to analyze...**

Abstract (Basic):
... 141) to detect corresponding points from two consecutive images obtained through a camera (110). An **epipolar** computation unit (142) computes **epipolar geometry** information based on orientation information and information on the points. A 3D analysis unit (144...
... The autonomous vehicle correctly obtains **epipolar geometry** information from the two corresponding points, thereby simply and accurately analyzing the motion of the...
...International Patent Class (Main): **G06K-009/00**

14/3,K/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015900660 **Image available**
WPI Acc No: 2004-058499/200406
Related WPI Acc No: 2003-764673
XRPX Acc No: N04-047262
Three-dimensional object multi-resolution modeling method involves reconstructing object from combination data that is produced by defining epipolar geometrical **representations of images with matrix**
Patent Assignee: MICROSOFT CORP (MICT)
Inventor: ANANDAN P; SHUM H; ZHANG Z
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6661913	B1	20031209	US 99132607	P	19990505	200406	B
			US 99336218	A	19990619		

Priority Applications (No Type Date): US 99132607 P 19990505; US 99336218 A 19990619
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6661913	B1		24	G06K-009/00	Provisional application US 99132607

... **multi-resolution modeling method involves reconstructing object from combination data that is produced by defining** epipolar geometrical **representations of images with matrix**

Abstract (Basic):
... are obtained as two-dimensional images, and are digitally combined. A combination data defined by **epipolar geometrical** representations of the images with a matrix, is produced, and the object is reconstructed from...
International Patent Class (Main): **G06K-009/00**

14/3,K/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015625509 **Image available**
WPI Acc No: 2003-687680/200365
XRPX Acc No: N03-549309

Optical flow computing system for video system, has image processor that derives epipolar geometry **for images from point matches included between images and computes optical flow for each pixel of images**

Patent Assignee: KONINK PHILIPS ELECTRONICS NV (PHIG)
Inventor: TRAJKOVIC M
Number of Countries: 028 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20030086590	A1	20030508	US 2001993061	A	20011105	200365	B
WO 200341015	A1	20030515	WO 2002IB4069	A	20021002	200365	
EP 1444656	A1	20040811	EP 2002767806	A	20021002	200452	
			WO 2002IB4069	A	20021002		
KR 2004060970	A	20040706	KR 2004706778	A	20040504	200472	
CN 1582460	A	20050216	CN 2002821847	A	20021002	200535	

Priority Applications (No Type Date): US 2001993061 A 20011105
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030086590	A1		9	G06K-009/00	
WO 200341015	A1	E		G06T-007/20	
Designated States (National): CN JP KR					
Designated States (Regional): AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR					
EP 1444656	A1	E		G06T-007/20	Based on patent WO 200341015
Designated States (Regional): AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR					
KR 2004060970	A			G06T-001/00	
CN 1582460	A			G06T-007/20	

Optical flow computing system for video system, has image processor that derives epipolar geometry **for images from point matches included between images and computes optical flow for each pixel...**

Abstract (Basic):
... The system has an image processor (104), which derives **epipolar geometry** for the images from point matches that are included between the images. The processor computes...

...of the images under a constraint that are derived from a fundamental matrix for the **epipolar geometry** .
... The **epipolar geometry** constraint provides improved accuracy and performance in computing optical flow...

...block diagram of a video system employing a method of computing optical flow under an **epipolar geometry** constraint...
International Patent Class (Main): **G06K-009/00** ...

14/3,K/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

011502416 **Image available**
WPI Acc No: 1997-480330/199744
XRPX Acc No: N97-400554

Image processing method for processing parallax geometry of pairs of points within three-dimensional scene - computes geometric relationship between image motion of pairs of points over multiple image frames representing three-dimensional scene

Patent Assignee: SARNOFF CORP (SARN-N)
Inventor: ANANDAN P; IRANI M

Number of Countries: 022 Number of Patents: 007
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9735161	A1	19970925	WO 97US2115	A	19970212	199744	B
EP 880675	A1	19981202	EP 97908644	A	19970212	199901	
			WO 97US2115	A	19970212		
US 6192145	B1	20010220	US 9611524	P	19960212	200112	
			US 97798857	A	19970211		
KR 2000064528	A	20001106	WO 97US2115	A	19970212	200128	
			KR 98706396	A	19980812		
JP 2001521650	W	20011106	JP 97532952	A	19970212	200203	
			WO 97US2115	A	19970212		
EP 880675	B1	20030528	EP 97908644	A	19970212	200336	
			WO 97US2115	A	19970212		
DE 69722378	E	20030703	DE 622378	A	19970212	200351	
			EP 97908644	A	19970212		
			WO 97US2115	A	19970212		

Priority Applications (No Type Date): US 97798857 A 19970211; US 9611524 P 19960212
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9735161	A1	E	38	G01B-011/04	
Designated States (National): CA JP KR MX					
Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE					
EP 880675	A1	E		G01B-011/04	Based on patent WO 9735161
Designated States (Regional): DE FR GB IT NL					
US 6192145	B1			G06K-009/00	Provisional application US 9611524
KR 2000064528	A			G01B-011/04	
JP 2001521650	W		41	G06T-001/00	Based on patent WO 9735161
EP 880675	B1	E		G01B-011/04	Based on patent WO 9735161
Designated States (Regional): DE FR GB IT NL					
DE 69722378	E			G01B-011/04	Based on patent EP 880675
					Based on patent WO 9735161

...Abstract (Basic): constraint (506) for a pair of points within the images which is independent of any **epipolar geometry** which may be defined for the pair of points...

...International Patent Class (Main): **G06K-009/00**

?

STIC Search Results Feedback Form

EIC 2600

Questions about the scope or the results of the search? Contact ***the EIC searcher or contact:***

Pamela Reynolds, EIC 2600 Team Leader
571-272-3505, Knox 8B59

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 2663*
- *Relevant prior art **found**, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

  Types of relevant prior art found:
  - ☐ Foreign Patent(s)
  - ☐ Non-Patent Literature
    (journal articles, conference proceedings, new product announcements etc.)
- *Relevant prior art **not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to STIC/EIC2600 Knox 8B59

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? show files; ds; save temp; logoff hold
File   2:INSPEC 1898-2005/Oct W5
         (c) 2005 Institution of Electrical Engineers
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File   8:Ei Compendex(R) 1970-2005/Oct W4
         (c) 2005 Elsevier Eng.  Info. Inc.
File  34:SciSearch(R) Cited Ref Sci 1990-2005/Oct W5
         (c) 2005 Inst for Sci Info
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         (c) 1999 Information Handling Services
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         (c)2005 Japan Science and Tech Corp(JST)
File  95:TEME-Technology & Management 1989-2005/Sep W4
         (c) 2005 FIZ TECHNIK
File  99:Wilson Appl. Sci & Tech Abs 1983-2005/Oct
         (c) 2005 The HW Wilson Co.
File 144:Pascal 1973-2005/Oct W5
         (c) 2005 INIST/CNRS
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 1998 Inst for Sci Info
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13
         (c) 2002 The Gale Group
File 603:Newspaper Abstracts 1984-1988
         (c)2001 ProQuest Info&Learning
File 483:Newspaper Abs Daily 1986-2005/Nov 04
         (c) 2005 ProQuest Info&Learning

Set     Items   Description
S1       3018   (COMPUT? OR CALCULAT? OR ADD?)(3N)OPTICAL?(3N)FLOW
S2      63655   (IMAGE?? OR PICTURE?? OR JPEG?? OR PHOTO?? OR GIF?? OR VID-
             EO OR PHOTOGRAPH??)(5N)SEQUENCE? ?
S3       8558   POINT(5N)MATCH???
S4       1509   (EPIPOLAR OR EPI()POLAR)(5N)GEOMETR?
S5        252   (MIDDLE OR MEDIAN OR MID OR AVERAGE OR MEAN OR MEDIUM OR M-
             IDPOINT OR INTERMEDIATE)(7N)(OPTICAL(3N)FLOW?)
S6       3145   FUNDAMENTAL(3N)MATRI???
S7         14   AU=(TRÄJKOV,  M? OR  TRAJKOVIC M)
S8          0   S7 AND S4
S9          0   S7 AND S1
S10      1392   S1 AND S2
S11         4   S10 AND S3
S12         3   RD (unique items)
S13         5   S10 AND S4
S14         5   RD (unique items)
S15         4   S14 NOT S12
S16        31   S10 AND S5
S17        18   RD (unique items)
S18        18   S17 NOT (S12 OR S15)
S19         4   S10 AND S6
S20         4   RD (unique items)
S21         2   S20 NOT (S18 OR S12 OR S15)
```

12/3,K/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

06934242 INSPEC Abstract Number: B9807-6140C-201, C9807-1250-076
Title: Efficient image matching using a relaxation algorithm
Author(s): Jae Min Park; Joon Hee Han
Journal: Journal of KISS(B) (Software and Applications) vol.25, no.2 p.336-47
Publisher: Korea Inf. Sci. Soc,
Publication Date: Feb. 1998 Country of Publication: South Korea
CODEN: CKNBFV ISSN: 1226-2285
SICI: 1226-2285(199802)25:2L.336:EIMU;1-T
Material Identity Number: E346-98005
Language: Korean
Subfile: B C

Abstract: Image matching is an important process in computer vision, and it can be used in **computing optical flow** , stereo matching, object tracking and so forth. We present a method of feature **point matching** between **sequences** of **images** using a relaxation labelling algorithm with efficient candidate selection. The initial features are selected among ...
... time, we propose two modified methods. These methods have been implemented and tested with various **image sequences** . The matching results show the effectiveness of our method.
...Descriptors: **image sequences** ;
...Identifiers: feature **point matching** ; ...

... **image sequences** ;

12/3,K/2 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

06068819 INSPEC Abstract Number: B9511-6140C-182, C9511-1250-124
Title: A correlation-relaxation-labeling framework for computing optical flow **-template matc**hing from a new perspective
Author(s): Wu, Q.X.
Author Affiliation: Landcare Res. Inst., Wellington, New Zealand
Journal: IEEE Transactions on Pattern Analysis and Machine Intelligence vol.17, no.9 p.843-53
Publication Date: Sept. 1995 Country of Publication: USA
CODEN: ITPIDJ ISSN: 0162-8828
U.S. Copyright Clearance Center Code: 0162-8828/95/$04.00
Language: English
Subfile: B C

Title: A correlation-relaxation-labeling framework for computing optical flow **-template matching from a new perspective**
...Abstract: the gradient-based approach in dealing with such applications. The two fundamental uncertainties in feature **matching** , whether template **matching** or feature **point** correspondences, are discussed. Correlation template **matching** procedures are established based on likelihood measurement. A method for determining optical flow is

developed...
...Descriptors: **image sequences** ;

12/3,K/3 (Item 1 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01292515 ORDER NO: AAD93-14879
PERCEPTION OF SHAPE AND MOTION
Author: HU, XIAOPING
Degree: PH.D.
Year: 1993
Corporate Source/Institution: UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN (0090)
Source: VOLUME 54/01-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 403. 322 PAGES

...fundamentals and robust algorithms for the problem of estimating three-dimensional motion and structure from **image sequences** under either perspective or orthographic projection. A theoretical framework and a system of methods are...

...and edges are quantized for further use such as matching.
Robust algorithms for obtaining unambiguous **matches** of **point** features and edges are developed, which enforce intensity or contour consistency, and geometric, rigidity, disparity...

...can be admitted in occluded regions.
Uniqueness conditions for determining structure and motion from monocular **image sequences** under either perspective or orthographic projections are established. Robust algorithms for estimating structure and motion...

...discontinuity boundaries and occluded regions without using surface models.
Physics-based vision problems such as **optical flow** and shape from shading are also **addressed** . New concepts and methods such as generalized, 3D, constrained, and parametric optical flows are introduced...
?

15/3,K/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

08910459 INSPEC Abstract Number: C2004-05-6130V-005
Title: Visual registration for unprepared augmented reality environments
Author(s): Ke Xu; Prince, S.J.D.; Cheok, A.D.; Yan Qiu; Kumar, K.G.
Author Affiliation: Dept. of Electr. & Comput. Eng., National Univ. of Singapore, Singapore
Journal: Personal and Ubiquitous Computing vol.7, no.5 p.287-98
Publisher: Springer-Verlag,
Publication Date: 2003 Country of Publication: UK
CODEN: PUCEAN ISSN: 1617-4909
SICI: 1617-4909(2003)7:5L.287:VRUA;1-8
Material Identity Number: H792-2003-005
Language: English
Subfile: C

...Abstract: an enormous challenge according to a recent survey. Most current systems are based on a **calculation** of the **optical flow** between the current and previous frames to adjust the label position. Here we present two alternative algorithms based on geometrical image constraints. The first is based on **epipolar geometry** and provides a general description of the constraints on image flow between two static scenes...
...Descriptors: **image sequences** ;
...Identifiers: **epipolar geometry** ;

15/3,K/2 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

08510563 INSPEC Abstract Number: C2003-02-6130V-061
Title: Visual registration for geographical labeling in wearable computing
Author(s): Ke Xu; Cheok, A.D.; Kar Wee Chia; Prince, S.J.D.
Author Affiliation: Nat. Univ. of Singapore, Singapore
Conference Title: Proceedings Sixth International Symposium on Wearable Computers (ISWC 2002) p.109-16
Publisher: IEEE, Piscataway, NJ, USA
Publication Date: 2002 Country of Publication: USA xv+240 pp.
ISBN: 0 7695 1816 8 Material Identity Number: XX-2002-03147
U.S. Copyright Clearance Center Code: 0-7695-1816-8/02/$17.00
Conference Title: Proceedings Sixth International Symposium on Wearable Computers (ISWC 2002)
Conference Sponsor: IEEE Comput. Soc. Tech. Committee on Wearable Comput
Conference Date: 7-10 Oct. 2002 Conference Location: Seattle, WA, USA
Language: English
Subfile: C

...Abstract: of geographical landmarks is a simple wearable computing application. Most current systems are based on **calculation** of **optical flow** between the current and previous frames to adjust the label position. Here we present two alternative algorithms based on geometrical image constraints The first is based on **epipolar geometry** and provides a general description of the constraints on image flow between two static scenes...

...Descriptors: **image sequences ;**
...Identifiers: **epipolar geometry ;**

15/3,K/3 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC
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06709918 INSPEC Abstract Number: B9711-6140C-269, C9711-5260B-216
Title: An integrated neural and algorithmic system for optical flow computation
Author(s): Criminisi, A.; Gioiello, G.A.M.; Molinelli, D.; Sorbello, F.
Author Affiliation: Dipt. di Ingegneria Elettrica, Palermo Univ., Italy
Conference Title: Neural Nets WIRN VIETRI-96. Proceedings of the 8th Italian Workshop on Neural Nets p.304-9
Editor(s): Marinaro, M.; Tagliaferri, R.
Publisher: Springer-Verlag, London, UK
Publication Date: 1997 Country of Publication: UK xi+343 pp.
ISBN: 3 540 76099 7 Material Identity Number: XX97-02055
Conference Title: Proceedings of 8th Italian Workshop on Neural Nets
Conference Date: 23-25 May 1996 Conference Location: Salerno, Italy
Language: English
Subfile: B C

Title: An integrated neural and algorithmic system for optical flow computation
...Abstract: motion areas in the scene; a matching algorithm is then used to obtain a sparse **optical flow** and to **compute** the **epipolar geometry** of the moving camera; and, finally, a refinement algorithm is used to produce a denser...
...Descriptors: **image sequences ;**
Identifiers: **optic**al flow computation ; ...

... **epipolar geometry ;**

15/3,K/4 (Item 1 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online
(c) 2005 ProQuest Info&Learning. All rts. reserv.

01431661 ORDER NO: AADAA-I9529550
THE MEASUREMENT AND USE OF VISUAL MOTION (OPTICAL FLOW, SEGMENTATION)
Author: WEBER, JOSEPH WILLIAM
Degree: PH.D.
Year: 1994
Corporate Source/Institution: UNIVERSITY OF CALIFORNIA, BERKELEY (0028)
Source: VOLUME 56/05-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 2799. 107 PAGES

...separate rigidly moving objects in the field of view.
This transformation usually begins with the **computation** of **optical flow** : the motion of the brightness pattern on the imaging array. The first part of this...

...of the scene into rigidly moving objects.
Once the separate regions have been identified, the **epipolar geometry** for the motion of each can be computed. The **epipolar geometry**

is expressed in terms of the Fundamental Matrix which contains the motion information for each...

...based on a Kalman filter is presented, along with experiments on both synthetic and real **image sequences** .

Finally, the approach taken in the dissertation is reviewed and recommendations for improving performance are...

?

18/3,K/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

09375079 INSPEC Abstract Number: B2005-06-6135-061, C2005-06-5260B-060
Title: Computation **of** optical flow **by five-point-constraint least-squares method**
Author(s): Qian Donghai; Zhang Jianming
Author Affiliation: Dept. of Precision Mech. Eng., Shanghai Univ., China
Journal: Journal of Computer Aided Design & Computer Graphics vol.16, no.9 p.1275-8
Publisher: Science Press,
Publication Date: Sept. 2004 Country of Publication: China
CODEN: JFTXFX ISSN: 1003-9775
SICI: 1003-9775(200409)16:9L.1275:COFF;1-K
Material Identity Number: H229-2004-011
Language: Chinese
Subfile: B C

Title: Computation **of** optical flow **by five-point-constraint least-squares method**
Abstract: The algorithm first **calculates** intersections of the **optical flow** constraint line of the central pixel with constraint lines of its eight-connected pixels. From...
... in the middle position and close to each other. These four points correspond to four **optical flow** velocities of **middle** values. The four chosen points and the central pixel compose five-credible-points and their ...

... constraint equations compose a super determinant equation group. The least-squares method is used to **calculate** the **optical flow** velocity of the central pixel. Such an approach results in higher computing efficiency and robustness.
Descriptors: **image sequences** ;

18/3,K/2 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

08914315 INSPEC Abstract Number: B2004-05-6135E-129, C2004-05-1250M-088
Title: Optical flow estimation and segmentation through surface fitting and robust statistics
Author(s): Hongshi Yan; Tjahjadi, T.
Author Affiliation: Sch. of Eng., Warwick Univ., UK
Conference Title: SMC'03 Conference Proceedings. 2003 IEEE International Conference on Systems, Man and Cybernetics. Conference Theme - System Security and Assurance (Cat. No.03CH37483) Part vol.2 p.1390-5 vol.2
Publisher: IEEE, Piscataway, NJ, USA
Publication Date: 2003 Country of Publication: USA 5 vol.(lxiv+lii+5045) pp.
ISBN: 0 7803 7952 7 Material Identity Number: XX-2003-03246
U.S. Copyright Clearance Center Code: 0 7803 7952 7/2003/$17.00
Conference Title: SMC '03 Conference Proceedings. 2003 IEEE International Conference on Systems, Man and Cybernetics
Conference Sponsor: Syst., Man & Cybernetics Soc. IEEE
Conference Date: 5-8 Oct. 2003 Conference Location: Washington, DC,

USA
Language: English
Subfile: B C
Copyright 2004, IEE
...Abstract: to smooth an image, and least-median-of-squares (LMedS) robust regression is used to **calculate** the **optical flow** , which can tolerate up to 50% outlier contamination. Second, the estimated **optical flow** map is segmented through a **mean** shift technique. Third, an affine flow model is employed to fit the coarse flow estimates...

... regions, and the affine fitted motion of the regions is refined with a robust least **median** squares process based on **optical flow** constraints. The experimental results have demonstrated that our approach achieved good performance in most synthetic and real **video sequences** .
...Descriptors: **image sequences** ;
...Identifiers: **video sequences**

18/3,K/3 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC
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07854066 INSPEC Abstract Number: A2001-07-8760I-016, B2001-04-7510N-027, C2001-04-7330-149
Title: On the use of optical flow methods with spin-tagging magnetic resonance imaging
Author(s): Moser, K.W.; Georgiadis, J.G.; Buckius, R.O.
Author Affiliation: Lab. for Quantitative Visualization in Energetics, Illinois Univ., Urbana, IL, USA
Journal: Annals of Biomedical Engineering vol.29, no.1 p.9-17
Publisher: Biomed. Eng. Soc,
Publication Date: Jan. 2001 Country of Publication: USA
CODEN: ABMECF ISSN: 0090-6964
SICI: 0090-6964(200101)29:1L.9:OFMW;1-S
Material Identity Number: A293-2001-002
U.S. Copyright Clearance Center Code: 0090-6964/2001$15.00
Language: English
Subfile: A B C
Copyright 2001, IEE

...Abstract: the robustness of the optical flow algorithm to noise and indicate that a 7%-10% **average** error can be expected from the **optical flow calculations** alone, independent of MRI image artifacts. Experiments on spin-tagging MRI images for a Re...
...Descriptors: **image** sequences ;

18/3,K/4 (Item 4 from file: 2)
DIALOG(R)File 2:INSPEC
(c) 2005 Institution of Electrical Engineers. All rts. reserv.

07739402 INSPEC Abstract Number: B2000-12-6135-014, C2000-12-5260B-020
Title: Structure from motion: beyond the epipolar constraint
Author(s): Brodsky, T.; Fermuller, C.; Aloimonos, Y.
Author Affiliation: Philips Lab., Briarcliff Manor, NY, USA
Journal: International Journal of Computer Vision vol.37, no.3 p. 231-58
Publisher: Kluwer Academic Publishers,

Publication Date: 2000 Country of Publication: Netherlands
CODEN: IJCVEQ ISSN: 0920-5691
SICI: 0920-5691(2000)37:3L.231:SFMB;1-Z
Material Identity Number: L537-2000-010
U.S. Copyright Clearance Center Code: 0920-5691/2000/$18.00
Language: English
Subfile: B C

...Abstract: measurements are used. To have available enough information, most existing techniques are based on the **intermediate computation** of **optical flow** which, however, poses a problem at the locations of depth discontinuities. If we knew where...
... the estimation are then utilized to perform a reconstruction of the scene from a short **sequence** of **images** . The technique is based on constraints on image derivatives which involve the 3D motion and...

... their relationship to the minimization of the epipolar constraint, and present experimental results using real **image sequences** that indicate the robustness of the method.
...Descriptors: **image sequences** ;
...Identifiers: **image sequences** ;

18/3,K/5 (Item 5 from file: 2)
DIALOG(R)File 2:INSPEC

07255988 INSPEC Abstract Number: B1999-07-6135-098, C1999-07-5260B-140
Title: Robust optical flow computation **based on least-** median **-of-squares regression**
Author(s): Ong, E.P.; Spann, M.
Author Affiliation: Inst. of Microelectron., Singapore
Journal: International Journal of Computer Vision vol.31, no.1 p. 51-82
Publisher: Kluwer Academic Publishers,
Publication Date: 1999 Country of Publication: Netherlands
CODEN: IJCVEQ ISSN: 0920-5691
SICI: 0920-5691(1999)31:1L.51:ROFC;1-F
Material Identity Number: L537-1999-003
U.S. Copyright Clearance Center Code: 0920-5691/99/$9.50
Language: English
Subfile: B C

Title: Robust optical flow computation **based on least-** median **-of-squares regression**
...Abstract: multiresolution version of the technique is also presented, again based on LMedS regression, which enables **Image sequences** containing large motions to be effectively handled. An extensive set of quantitative comparisons with a...

... natural scenes with known flow) and natural images. Both angular and absolute flow errors are **calculated** for those sequences with known **optical flow** . Displaced frame difference error, used extensively in video compression, is used for those natural scenes...
Descriptors: **image sequences** ;
Identifiers: **optical flow computation** ;

18/3,K/6 (Item 6 from file: 2)
DIALOG(R)File 2:INSPEC

06256779 INSPEC Abstract Number: B9606-6140C-327, C9606-1250-155
Title: Robust computation **of** optical flow
Author(s): Ong, E.-P.; Spann, M.
Author Affiliation: Sch. of Electron. & Electr. Eng., Birmingham Univ., UK
Conference Title: BMVC `95 Proceedings of the 6th British Machine Vision Conference Part vol.2 p.573-82 vol.2
Editor(s): Pycock, D.
Publisher: BMVA Press, Guildford, UK
Publication Date: 1995 Country of Publication: UK 2 vol. 722 pp.
ISBN: 0 9521898 2 8 Material Identity Number: XX96-00919
Conference Title: BMVC `95 Proceedings of the 6th British Machine Vision Conference
Conference Date: 11-14 Sept. 1995 Conference Location: Birmingham, UK
Language: English
Subfile: B C

Title: Robust computation **of** optical flow
Abstract: This paper presents an algorithm to **compute optical flow** accurately at motion discontinuities and occlusion regions based on a robust estimator (the least-median...

... estimator). The motion constraint equation and the 2-D affine motion model are used to **compute** the **optical flow** in a local neighbourhood. The use of the least- **median** -squares robust estimator enables points where **optical flow** cannot be **computed** to be rejected as outliers rather than assigning erroneous flow to such points. In addition...

... neighbourhood strategy eliminates the block-effects that are commonly faced in local differential methods for **computing optical flow** . The algorithm is also able to deal with cases of the local neighbourhood straddling regions of three motions. Results for both synthetic and real **image sequences** are presented.
...Descriptors: **image sequences** ;
...Identifiers: **image sequences**

18/3,K/7 (Item 7 from file: 2)
DIALOG(R)File 2:INSPEC

06227200 INSPEC Abstract Number: A9609-8770E-002, B9605-7510B-099, C9605-7330-125
Title: Detection of motion during tomographic acquisition by an optical flow algorithm
Author(s): Noumeir, R.; Mailloux, G.E.; Lemieux, R.
Author Affiliation: Dept. of Electr. Eng., Ecole de Technol. Superieure, Montreal, Que., Canada
Journal: Computers and Biomedical Research vol.29, no.1 p.1-15
Publisher: Academic Press,
Publication Date: Feb. 1996 Country of Publication: USA

CODEN: CBMRB7 ISSN: 0010-4809
SICI: 0010-4809(199602)29:1L.1:DMDT;1-9
Material Identity Number: C029-96002
U.S. Copyright Clearance Center Code: 0010-4809/96/$18.00
Language: English
Subfile: A B C

...Abstract: the tomographic views in single photon emission computerized tomography (SPECT) is proposed. This method first **computes** the **optical flow** vector field which assigns to each pixel of a tomographic view the 2D displacement vector that describes its motion between two successive views. The **average optical flow** in a region of interest is then computed to measure its inter-view global motion...
...Descriptors: **image sequences** ;

18/3,K/8 (Item 8 from file: 2)
DIALOG(R)File 2:INSPEC

06205011 INSPEC Abstract Number: A9607-8760K-015, B9604-7510B-110, C9604-7330-156
Title: Patient motion quantification from tomographic data
Author(s): Noumeir, R.; Mailloux, G.E.; Lemieux, R.
Author Affiliation: Dept. of Electr. Eng., Ecole de Technol. Superieure, Montreal, Que., Canada
Conference Title: 1995 Canadian Conference on Electrical and Computer Engineering (Cat. No.95TH8103) Part vol.1 p.535-8 vol.1
Editor(s): Gagnon, F.
Publisher: IEEE, New York, NY, USA
Publication Date: 1995 Country of Publication: USA 2 vol. xxxvii+1195 pp.
ISBN: 0 7803 2766 7 Material Identity Number: XX95-01817
U.S. Copyright Clearance Center Code: 0 7803 2766 7/95/$44.00
Conference Title: Proceedings 1995 Canadian Conference on Electrical and Computer Engineering
Conference Sponsor: IEEE Canada
Conference Date: 5-8 Sept. 1995 Conference Location: Montreal, Que., Canada
Language: English
Subfile: A B C

...Abstract: procedure for the detection, quantification and correction of translational motion during tomographic acquisition. The method **computes** the **optical flow** vector field between two successive views. The **optical flow** vector field assigns to each pixel of a tomographic view a two dimensional velocity that describes its motion across the image plane between two successive views. The **average optical flow** of a region of interest is when computed to measure its interview global motion. Motion...
...Descriptors: **image sequences** ;
...Identifiers: **average optical flow** ;

18/3,K/9 (Item 9 from file: 2)
DIALOG(R)File 2:INSPEC

05666485 INSPEC Abstract Number: B9406-6140C-152, C9406-1250-107
Title: Optical flow through relaxation in the velocity space
Author(s): Colombo, C.; Del Bimbo, A.; Santini, S.
Author Affiliation: Dept. of Syst. & Inf., Florence Univ., Italy
Journal: Pattern Recognition Letters vol.15, no.4 p.373-82
Publication Date: April 1994 Country of Publication: Netherlands
CODEN: PRLEDG ISSN: 0167-8655
U.S. Copyright Clearance Center Code: 0167-8655/94/$07.00
Language: English
Subfile: B C

...Abstract: is suggested, in which relaxation is accomplished by a mesh grid of loosely coupled simple **computational** units, one for each image point where optical **flow** has to be **computed** . **Optical flow** smoothing is performed by a vector **median** filter, whose nonlinear nature is helpful in preserving motion boundaries. Results on both synthetic and...
...Descriptors: **image sequences** ;

18/3,K/10 (Item 10 from file: 2)
DIALOG(R)File 2:INSPEC

05512459 INSPEC Abstract Number: B9312-6140C-133, C9312-1250-103
Title: Direct recovering of Nth order surface structure using unified optical flow field
Author(s): Shu, C.Q.; Shi, Y.Q.
Author Affiliation: Dept. of Electr. & Comput. Eng., New Jersey Inst. of Technol., Newark, NJ, USA
Journal: Pattern Recognition vol.26, no.8 p.1137-48
Publication Date: Aug. 1993 Country of Publication: UK
CODEN: PTNRA8 ISSN: 0031-3203
U.S. Copyright Clearance Center Code: 0031-3203/93/$6.00+.00
Language: English
Subfile: B C B C

Abstract: There are two different approaches for estimation of structure and/or motion of objects from **image sequences** in the **computer** vision community. One is the **optical flow** approach, and the other is the feature correspondence approach. Direct methods have been developed, that use the **optical flow** approach, but avoid computing the full **optical flow** field as an **intermediate** step for recovering structure and motion. The unified optical flow field (UOFF) theory has also...
... structure is recovered from a given pair of stereo images instead of from a monocular **image sequence** .
...Descriptors: **image sequences** ;
...Identifiers: **image sequences** ;

18/3,K/11 (Item 11 from file: 2)
DIALOG(R)File 2:INSPEC

04908840 INSPEC Abstract Number: C91039590
Title: 3D motion and structure from image sequences
Author(s): De Micheli, E.; Verri, A.; Uras, S.

Author Affiliation: Dipartimento di Fisica, Genova Univ., Italy
Conference Title: Modelling the Innovation: Communications, Automation and Information Systems. Proceedings of the IFIP TC 7 Conference p. 349-55
Editor(s): Carnevale, M.; Lucertini, M.; Nicosia, S.
Publisher: North-Holland, Amsterdam, Netherlands
Publication Date: 1990 Country of Publication: Netherlands xv+593 pp.
ISBN: 0 444 88565 X
Conference Date: 21-23 March 1990 Conference Location: Rome, Italy
Language: English
Subfile: C

Title: 3D motion and structure from image sequences
...Abstract: can be computed by assuming that the spatial gradient of the time-varying brightness of **image sequences** is stationary. The obtained dense vector field, or optical flow, which estimates the spatial displacement...
... is also demonstrated. Qualitative information on the viewed motion can also be obtained by segmenting **optical flow** in the regions where the **average** percentage of uniform expansion, pure rotation, and shear is larger than a given value. This...

... Due to the very good agreement between expected and experimental results, it is concluded that **optical flow** can efficiently be use din many **computer** vision applications.
...Identifiers: **image sequences** ;

18/3,K/12 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

06627254 E.I. No: EIP03487750931
Title: Optical flow estimation and segmentation through surface fitting and robust statistics
Author: Yan, Hongshi; Tjahjadi, Tardi
Corporate Source: School of Engineering University of Warwick, Coventry CV4 7AL, United Kingdom
Conference Title: System Security and Assurance
Conference Location: Washington, DC, United States Conference Date: 20031005-20031008
E.I. Conference No.: 61777
Source: Proceedings of the IEEE International Conference on Systems, Man and Cybernetics v 2 2003. p 1390-1395 (IEEE cat n 03CH37483)
Publication Year: 2003
CODEN: PICYE3 ISSN: 0884-3627
Language: English

...Abstract: to smooth an image, and least-median-of-squares (LMedS) robust regression is used to **calculate** the **optical flow** , which can tolerate up to 50% outlier contamination. Second, the estimated **optical flow** map is segmented through a **mean** shift technique. Third, an affine flow model is employed to fit the coarse flow estimates...
...regions, and the affine fitted motion of the regions is refined with a robust least **median** squares process based on **optical flow** constraints. The experimental results have demonstrated that our approach achieved good performance in most synthetic and real **video sequences** . 17 Refs.

Identifiers: **Optical flow** estimation; Polynomial surface fitting; Robust least- **median** -squares regression; Robust statistic clustering

18/3,K/13 (Item 2 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

04102024 E.I. No: EIP95022595354
Title: Motion estimation based on Markov random fields
Author: Rouchouze, B.; Mathieu, P.; Gaidon, T.; Barlaud, M.
Corporate Source: Univ of Nice-Sophia Antipolis, Valbonne, Fr
Conference Title: Proceedings of the 1994 1st IEEE International Conference on Image Processing. Part 3 (of 3)
Conference Location: Austin, TX, USA Conference Date: 19941113-19941116
E.I. Conference No.: 42570
Source: IEEE International Conference on Image Processing v 3 1994. IEEE, Los Alamitos, CA, USA,94CH35708. p 270-274
Publication Year: 1994
CODEN: 001953
Language: English

Abstract: This paper deals with a new method for estimation of motion field in **image sequence** coding domain. The proposed method is based on a pel-recursive technique and characterised by...
Identifiers: Motion estimation; Markov random fields; Pel recursive techniques; Edge preserving regularization; **Optical flow computation** algorithms; Bayesian estimation; Displaced frame difference; **Mean** squared error

18/3,K/14 (Item 3 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

03769132 E.I. No: EIP93101115565
Title: Optical flow interpolation of serial slice images
Author: Williams, Winston L.; Barrett, William A.
Corporate Source: WordPerfect Corp., Orem, UT, USA
Conference Title: Medical Imaging 1993: Image Processing
Conference Location: Newport Beach, CA, USA Conference Date: 19920214-19920219
E.I. Conference No.: 19474
Source: Proceedings of SPIE - The International Society for Optical Engineering v 1898 1993. Publ by Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, USA. p 93-104
Publication Year: 1993
CODEN: PSISDG ISSN: 0277-786X ISBN: 0-8194-1131-0
Language: English

Abstract: Optical flow has been used for matching or tracking of individual **image** objects through a time **sequence** of **images** and is applied to the problem of image interpolation by treating the serial slice **images** as a spatial **sequence** . **Calculation** of **optical flow** between two images results in a 'velocity vector map' indicating the relative displacement between similar...
...slices i minus 1 and i plus 1 and then comparing i' with the original **middle** scanned slice, i. **Optical flow** interpolation compares favorably

to linear interpolation both visually and quantitatively. Quantitative comparison, vertical bar i...

18/3,K/15 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

13275972 Genuine Article#: BAZ52 No. References: 15
Title: A pipelined real-time optical flow algorithm
Author(s): Correia MV (REPRINT) ; Campilho A
Corporate Source: Univ Porto,Inst Engn Biomed, Lab Sinal & Imagem Biomed,Rua Dr Roberto Frias S-N/P-4200465 Oporto//Portugal/ (REPRINT); Univ Porto,Inst Engn Biomed, Lab Sinal & Imagem Biomed,P-4200465 Oporto//Portugal/; Univ Porto,Fac Engn, Dept Eng Electrotecn & Computadores,P-4200465 Oporto//Portugal/(mcorreia@fe.up.pt; campilho@fe.up.pt)
, 2004, V3212, 2, P372-380
ISSN: 0302-9743 Publication date: 20040000
Publisher: SPRINGER-VERLAG BERLIN, HEIDELBERGER PLATZ 3, D-14197 BERLIN, GERMANYIMAGE ANALYSIS AND RECOGNITION, PT 2, PROCEEDINGS
Series: LECTURE NOTES IN COMPUTER SCIENCE
Language: English Document Type: ARTICLE (ABSTRACT AVAILABLE)

Abstract: **Optical flow** algorithms generally demand for high **computational** power and huge storage capacities. This paper is a contribution for real-time implementation of an **optical flow** algorithm on a pipeline machine. This overall **optical flow computation** methodology is presented and evaluated on a set of synthetic and real **image sequences** . Results are compared to other implementations using as measures the **average** angular error, the **optical flow** density and the root **mean** square error. The proposed implementation achieves very low computation delays, allowing operation at standard video...

18/3,K/16 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

02515892 Genuine Article#: LG673 No. References: 23
Title: MULTIWINDOW LEAST-SQUARES APPROACH TO THE ESTIMATION OF OPTICAL-FLOW WITH DISCONTINUITIES
Author(s): BARTOLINI F; CAPPELLINI V; COLOMBO C; MECOCCI A
Corporate Source: UNIV FLORENCE,DIPARTIMENTO INGN ELETTRON,VIA S MARTA 3/I-50139 FLORENCE//ITALY/; UNIV PERFEZIONAMENTO S ANNA,SCUOLA SUPER,ADV ROBOT TECHNOL & SYST LAB/I-56127 PISA//ITALY/; UNIV PAVIA,DIPARTIMENTO ELETTRON/I-27100 PAVIA//ITALY/
Journal: OPTICAL ENGINEERING, 1993, V32, N6 (JUN), P1250-1256
ISSN: 0091-3286
Language: ENGLISH Document Type: ARTICLE (Abstract Available)

Abstract: The use of optical flow fields in **image sequence** analysis allows us to perform motion-based segmentation as well as 3-D reconstruction. Many...

...Other techniques compute the flow field based only on local information. A local algorithm explicitly **addressing** the problem of evaluating a

reliable **optical flow** field at motion boundaries is presented. Velocity vectors are computed as solutions of a multiwindow...

18/3,K/17 (Item 1 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01243100 ORDER NO: NOT AVAILABLE FROM UNIVERSITY MICROFILMS INT'L.
EXPLOITING CONTINUITY-IN-TIME IN MOTION VISION (VISION)
Author: MICHAEL, DAVID JOSHUA
Degree: PH.D.
Year: 1992
Corporate Source/Institution: MASSACHUSETTS INSTITUTE OF TECHNOLOGY (0753)
Source: VOLUME 53/06-B OF DISSERTATION ABSTRACTS INTERNATIONAL. PAGE 2989.

...a camera navigating along an unknown trajectory through an unknown stationary environment. Given the time **sequence** of **images** obtained by the camera, the task is to simultaneously estimate both the camera's trajectory...

...in time using additional image frames. The approach is successfully demonstrated on natural and synthetic **image sequences** .
The **image sequences** have a wide field of view--it is shown that a wide field of view...

...desired result as output. No feature detector needs to be built. No correspondences need be **computed** . Estimating **optical flow** is not an **intermediate** step. (3) No restrictions are placed on the camera motion or the environment's depth...

18/3,K/18 (Item 1 from file: 94)
DIALOG(R)File 94:JICST-EPlus

04084110 JICST ACCESSION NUMBER: 99A0183832 FILE SEGMENT: JICST-E
Efficient Estimation of Highly Accurate Optical Flow **by Pixel-Wise Matching and Vector** Median **Filtering.**
ISHIKAWA SATORU (1); YONEDA MASAAKI (2); HASE HIROYUKI (2); SAKAI MITSURU (2)
(1) Toyamashokugyonoryokukaihatsutandai; (2) Toyama Univ., Fac. of Eng.
Gazo Denshi Gakkaishi(Journal of the Institute of Image Electronics Engineers of Japan), 1998, VOL.27,NO.6, PAGE.831-839, FIG.10, TBL.4, REF.15
JOURNAL NUMBER: S0815AAG ISSN NO: 0285-9831
UNIVERSAL DECIMAL CLASSIFICATION: 681.3:621.397.3
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication

Efficient Estimation of Highly Accurate Optical Flow **by Pixel-Wise Matching and Vector** Median **Filtering.**
ABSTRACT: There is the gradient method for optical flow estimation to detect moving objects from **image sequences** in **computer** vision. We

propose a method of **optical flow** estimation using pixel-wise matching and vector **median** filtering. Estimated flows by our method have sufficient accuracy in motion edge. Our method consists of two steps. First, we **calculate optical flow** constraint equation and estimate **optical flow** vector using the pixel-wise matching procedure, which is based on the equation at each pixel. Second, a vector **median** filtering procedure is applied to the **optical flow** field, which is specifically aimed to remove estimation errors and to preserve motion boundaries. The...

?

21/3,K/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

07634260 INSPEC Abstract Number: B2000-08-6135-104, C2000-08-5260B-126
Title: Fundamental matrix **from** optical flow : **optimal** computation **and reliability evaluation**
Author(s): Kanatani, K.; Shimizu, Y.; Ohta, N.; Brooks, M.J.; Chojnacki, W.; van den Hengel, A.
Author Affiliation: Dept. of Comput. Sci., Gunma Univ., Japan
Journal: Journal of Electronic Imaging vol.9, no.2 p.194-202
Publisher: SPIE-Int. Soc. Opt. Eng,
Publication Date: April 2000 Country of Publication: USA
CODEN: JEIME5 ISSN: 1017-9909
SICI: 1017-9909(200004)9:2L.194:FMFO;1-U
Material Identity Number: P618-2000-002
U.S. Copyright Clearance Center Code: 1017-9909/2000/$15.00
Language: English
Subfile: B C

Title: Fundamental matrix **from** optical flow : **optimal** computation **and reliability evaluation**
...Abstract: a special equation analogous to the epipolar constraint arising in stereo vision. Computing the "flow **fundamental matrix** " of this equation is an essential prerequisite to undertaking three-dimensional analysis of the flow...
...Descriptors: **image sequences** ;
...Identifiers: flow **fundamental matrix** ;

21/3,K/2 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

08245359 Genuine Article#: 262NC No. References: 28
Title: Improving feature tracking with robust statistics
Author(s): Fusiello A (REPRINT) ; Trucco E; Tommasini T; Roberto V
Corporate Source: UNIV VERONA,DIPARTIMENTO SCI & TECHNOL, CA VIGNAL 2, STRADA GRAZIE/I-37134 VERONA//ITALY/ (REPRINT); UNIV UDINE,DIPARTIMENTO MATEMAT & INFORMAT/I-33100 UDINE//ITALY/; HERIOT WATT UNIV,DEPT ELECT & COMP ENGN/EDINBURGH/MIDLOTHIAN/SCOTLAND/
Journal: PATTERN ANALYSIS AND APPLICATIONS, 1999, V2, N4, P312-320
ISSN: 1433-7541 Publication date: 19990000
Publisher: SPRINGER VERLAG, 175 FIFTH AVE, NEW YORK, NY 10010
Language: English Document Type: ARTICLE (ABSTRACT AVAILABLE)

Abstract: This paper addresses robust feature tracking. The aim is to track point features in a **sequence** of **images** and to identify unreliable features resulting from occlusions, perspective distortions and strong intensity changes. We...

...show a quantitative example of the benefits introduced by the algorithm for the case of **fundamental matrix** estimation. The complete code of the robust tracker is available via ftp.
...Identifiers-- **OPTICAL - FLOW** ; **IMAGE SEQUENCES** ; MOTION; **COMPUTER**; GEOMETRY
?

File 348:EUROPEAN PATENTS 1978-2005/Oct W04
(c) 2005 European Patent Office
File 349:PCT FULLTEXT 1979-2005/UB=20051103,UT=20051027
(c) 2005 WIPO/Univentio

Set	Items	Description
S1	223	(COMPUT? OR CALCULAT? OR ADD?)(3N)OPTICAL?(3N)FLOW
S2	25492	(IMAGE?? OR PICTURE?? OR JPEG?? OR PHOTO?? OR GIF?? OR VIDEO OR PHOTOGRAPH??)(5N)SEQUENCE? ?
S3	4516	POINT(5N)MATCH???
S4	68	(EPIPOLAR OR EPI()POLAR)(5N)GEOMETR?
S5	63	(MIDDLE OR MEDIAN OR MID OR AVERAGE OR MEAN OR MEDIUM OR MIDPOINT OR INTERMEDIATE)(7N)(OPTICAL(3N)FLOW?)
S6	169	FUNDAMENTAL(3N)MATRI???
S7	0	AU=(TRAJKOV, M? OR TRAJKOVIC M)
S8	27589	IC=G06K?
S9	31	S1(S)S2
S10	3	S9(S)S3
S11	1	S9(S)S4
S12	0	S11 NOT S10
S13	1	S9(S)S5
S14	1	S13 NOT S10
S15	1	S9(S)S6
S16	0	S15 NOT S10
S17	4	S8 AND S9
S18	4	S17 NOT S10

10/3,K/1 (Item 1 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

00338450

Image shake detecting device.
Einrichtung zur Feststellung des Bildzitterns.
Detecteur de tremblotement d'image.

PATENT ASSIGNEE:
CANON KABUSHIKI KAISHA, (542361), 30-2, 3-chome, Shimomaruko, Ohta-ku, Tokyo, (JP), (applicant designated states: DE;FR;GB;NL)
INVENTOR:
Sekine, Masayoshi, 1-10, Ichigaya-nakano-cho, Shinjuku-ku Tokyo, (JP)
Nakajima, Toshiyuki, 2-1-8, Shibamata, Katsushika-ku Tokyo, (JP)
Kai, Takashi, 1505-2, Tsurumaki, Hatano-shi Kanagawa-ken, (JP)
Yoshimura, Katsuji, 7-5, Nakazawa-cho, Hamamatsu-shi Shizuoka-ken, (JP)
Toyama, Masamichi, 3-17, Honmoku-motomachi Naka-ku, Yokohama-shi Kanagawa-ken, (JP)
LEGAL REPRESENTATIVE:
Pellmann, Hans-Bernd, Dipl.-Ing. et al (9227), Patentanwaltsburo Tiedtke-Buhling-Kinne & Partner Bavariaring 4, D-80336 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 332169 A1 890913 (Basic)
EP 332169 B1 930303
APPLICATION (CC, No, Date): EP 89104111 890308;
PRIORITY (CC, No, Date): JP 8857670 880310; JP 8892695 880415; JP 8892697 880415; JP 88123625 880519; JP 88269554 881027; JP 8927038 890206
DESIGNATED STATES: DE; FR; GB; NL
INTERNATIONAL PATENT CLASS: H04N-005/225; H04N-005/21; H04N-003/26;
ABSTRACT WORD COUNT: 181

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	5078
CLAIMS B	(German)	EPBBF1	1270
CLAIMS B	(French)	EPBBF1	1867
SPEC B	(English)	EPBBF1	22216
Total word count - document A			0
Total word count - document B			30431
Total word count - documents A + B			30431

...SPECIFICATION displacement information signal 208a which is obtained from between the images taken in by the **image** sensor **204** respectively at the time points t4 and t5 is output from the image displacement detection...

...of the fact that the value of the image displacement information signal 208a of the **image** displacement detecting circuit 208 which **is** dispersively obtained timewise through the operation described in the foregoing involves a time delay, ...of example the image plane of a currently photographed field. Fig. 21(b) shows an **optical flow** obtained by accumulating **for** a given period of time a difference between the current field and an immediately preceding...employed by the image shake quantity detecting circuit 340 is not limited to the representing **point matching** method. The movement can be detected at a high speed by image processing. The method...

10/3,K/2 (Item 1 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

01011290 **Image available**
HOMOGRAPHY TRANSFER FROM POINT MATCHES
TRANSFERT D'HOMOGRAPHIE A PARTIR DE CORRESPONDANCES DE POINTS
Patent Applicant/Assignee:
KONINKLIJKE PHILIPS ELECTRONICS N V, Groenewoudseweg 1, NL-5621 BA Eindhoven, NL, NL (Residence), NL (Nationality)
Inventor(s):
TRAJKOVIC Miroslav, Prof. Holstlaan 6, NL-5656 AA Eindhoven, NL,
Legal Representative:
GROENENDAAL Antonius W M (agent), Internationaal Octrooibureau B.V., Prof. Holstlaan 6, NL-5656 AA Eindhoven, NL,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200341423 A2-A3 20030515 (WO 0341423)
Application: WO 2002IB4060 20021001 (PCT/WO IB0204060)
Priority Application: US 2001992922 20011105
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
CN JP KR
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR
Publication Language: English
Filing Language: English
Fulltext Word Count: 3545

Fulltext Availability:
Detailed Description

Detailed Description
... images i, j, k are related by the following.

Hikco = HjkcoHuco . (4)
As noted above, **point matches** between any **image** pair within the **image sequence** 200 are known or may be readily **computed** (e.g., by sparse **optical flow computation**), and therefore epipoles and ftindarnental matrices may be easily determined.

Furthermore, at least one infinity...

10/3,K/3 (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

01010925 **Image available**
A METHOD FOR COMPUTING OPTICAL FLOW UNDER THE EPIPOLAR CONSTRAINT
PROCEDE PERMETTANT DE CALCULER UN FLUX OPTIQUE SOUS CONTRAINTE EPIPOLAIRE
Patent Applicant/Assignee:
KONINKLIJKE PHILIPS ELECTRONICS N V, Groenewoudseweg 1, NL-5621 BA Eindhoven, NL, NL (Residence), NL (Nationality)
Inventor(s):
TRAJKOVIC Miroslav, Prof. Holstlaan 6, NL-5656 AA Eindhoven, NL,
Legal Representative:
GROENENDAAL Antonius W M (agent), Internationaal Octrooibureau B.V., Prof. Holstlaan 6, NL-5656 AA Eindhoven, NL,
Patent and Priority Information (Country, Number, Date):

Patent: WO 200341015 A1 20030515 (WO 0341015)
Application: WO 2002IB4069 20021002 (PCT/WO IB0204069)
Priority Application: US 2001993061 20011105
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
CN JP KR
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR
Publication Language: English
Filing Language: English
Fulltext Word Count: 3852

Fulltext Availability:
Detailed Description

English Abstract
Point matches between **images** within an **image sequence** are identified by sparse **optical flow computation** and employed to **compute** a fundamental matrix for the epipolar geometry, which in turn is employed to derive an epipolar geometry constraint for computing dense optical flow for the **image sequence** . The epipolar geometry constraint may further be combined with local, heuristic constraints or robust statistical...

Detailed Description
... to provide, for use in video system, a method of computing optical flow for an **image sequence** by imposing a global, non-heuristic, geometrical constraint. **Point matches** between inia, es within the **image sequence** are identified by sparse
.9
optical flow computation and employed to **compute** a fatidamental matrix for the epipolar geometry, which in turn is employed to derive an epipolar geometry constraint for computing dense optical flow for the **image sequence** . The epipolar geometry constraint may further be combined with local, heuristic constraints or robust statistical... pixels, between images within the sequence.

In the present invention, optical flow for the received **sequence** of **images** 200 is **computed** by first performing the sparse **optical flow computation** described above. That is, the points in the image(s) with the richest information. content (e.g., high variation in I, 1,, such as comers) are identified and matched between **images** within the **sequence** . The identified **point matches** are then employed to compute the epipolar geometry relating the views between consecutive frames, described by a fundamental matrix F. Normally at least seven **point matches** are required to compute the fundamental matrix F relating all pixels within two **images** for the **image sequence** .

In computing the fundamental matrix, a pinhole camera model illustrated in Fig. 5D is employed...to one embodiment of the present invention. The process 400 begins with receipt of an **image sequence** (step 401) for which optical flow information is needed. **Point matches** between **images** within the **image sequence** are first **computed** utilizing sparse **optical flow computation** (step 402), and are employed to determine the fundamental matrix of correlation between **images** within the **image sequence** (step 403).

14/3,K/1 (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

01199350 **Image available**
OPTICAL FLOW ESTIMATION METHOD
PROCEDE D'ESTIMATION DE FLUX OPTIQUE
Patent Applicant/Assignee:
QUEEN MARY & WESTFIELD COLLEGE, University of London, London E1 4NS, GB, GB (Residence), GB (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
COIMBRA Miguel, Rua Clube dos Cacadores, 322, P-4430-057 Vila Nova de Gaia, PT, PT (Residence), PT (Nationality), (Designated only for: US)
DAVIES Michael Evan, 21 Abercrombie Street, Battersea, London SW11 2JB, GB, GB (Residence), GB (Nationality), (Designated only for: US)
Legal Representative:
HARDING Richard Patrick (agent), Marks & Clerk, 4220 Nash Court, Oxford Business Park South, Oxford Oxfordshire OX4 2RU, GB,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200506762 A2-A3 20050120 (WO 0506762)
Application: WO 2004EP51325 20040701 (PCT/WO EP04051325)
Priority Application: GB 200315412 20030702
Designated States:
(All protection types applied unless otherwise stated - for applications 2004+)
AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PL PT RO SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 6570

Fulltext Availability:
Detailed Description
Claims

Detailed Description
... According to a third aspect of the present invention there is provided computer readable recording **medium** on which is recorded an **optical flow** estimation program for causing a **computer** to execute the following steps- extracting, from encoded **image** data representative of an **image sequence** of a changing object having a motion field, first ftaine data blocks not incorporating motion...

Claim
... of Claims 12 to 2 1, incorporating a digital processor.

23 A computer readable recording **medium** on which is recorded an **optical flow** estimation program for causing a **computer** to execute the following steps: (a) extracting, from encoded **image** data representative of an **image sequence** of a changing object having a motion field, first frame data blocks not incorporating motion...

18/3,K/1 (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

01068893 **Image available**
METHOD AND APPARATUS FOR DETERMINING OPTICAL FLOW
PROCEDE ET APPAREIL POUR DETERMINER UN FLUX OPTIQUE
Patent Applicant/Assignee:
SARNOFF CORPORATION, 201 Washington Road, CN 5300, Princeton, NJ 08543, US, US (Residence), US (Nationality)
Inventor(s):
ZHAO Wenyi, 575 Easton Avenue, Apt. 6-L, Somerset, NJ 08873, US,
SAWHNEY Harpreet, 17 Melville Road, West Windsor, NJ 08550, US,
Legal Representative:
TONG Kin-Wah (et al) (agent), Moser, Patterson & Sheridan, LLP, 595 Shrewsbury Avenue, Suite 100, Shrewsbury, NJ 07702, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200398402 A2-A3 20031127 (WO 0398402)
Application: WO 2003US16085 20030519 (PCT/WO US03016085)
Priority Application: US 2002381506 20020517
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
IL JP
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE SI SK TR
Publication Language: English
Filing Language: English
Fulltext Word Count: 3952

Main International Patent Class: **G06K-009/00**
International Patent Class: **G06K-009/36**
Fulltext Availability:
Detailed Description

English Abstract
A method and apparatus for determining the **optical flow** of a **sequence** of **image** frames. **Optical flow** fields are **computed** in a manner that enforces both brightness constancy and a consistency constraint.

Detailed Description
... sub-pixel motion can be determined using the foregoing methods. To demonstrate the improvement of **optical flow computations** , the foregoing **optical flow** methods have been applied to a super-resolution method using semi-synthetic data where flow...
...The present invention is also applicable to flowbased super-resolution optical flow processes. For example, **video sequences** captured with digital **video** camcorders.

[0054] It should be noted that when the present invention computes consistent flow field...

18/3,K/2 (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

01006484 **Image available**

METHOD AND APPARATUS FOR BACKGROUND SEGMENTATION BASED ON MOTION LOCALIZATION

PROCEDE ET APPAREIL DE SEGMENTATION D'ARRIERE-PLAN BASEE SUR LA LOCALISATION DES MOUVEMENTS

Patent Applicant/Assignee:
INTEL ZAO, Chapaevsky per., 14, Sokol-10 Business Center, Moscow, 125252, RU, RU (Residence), RU (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
BOVYRIN Alexandr V, ul. Usilova, 6-107, Nizhny Novgorod, 603093, RU, RU (Residence), RU (Nationality), (Designated only for: US)
ERUHIMOV Viktor Lvovich, ul. Minina, 23-3, Nizhny Novgorod, 603155, RU, RU (Residence), RU (Nationality), (Designated only for: US)
MOLINOV Sergei A, ul. Proletarskaya, 5-240, Nizhny Novgorod, 603159, RU, RU (Residence), RU (Nationality), (Designated only for: US)
Legal Representative:
TKACHENKO Valeria Sergeevna (agent), OOO "Sojuzpatent", ul. Iliinka, 5/2, Moscow, 103735, RU,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200336557 A1 20030501 (WO 0336557)
Application: WO 2001RU436 20011022 (PCT/WO RU0100436)
Priority Application: WO 2001RU436 20011022
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 6480

Main International Patent Class: **G06K-009/00**
Fulltext Availability:
Detailed Description

Detailed Description

... and background training. Motion segmentation is used to find regions in each frame of an **image sequence** that correspond to moving objects. Motion segmentation starts from a motion field obtained from **optical flow calculated** on two consecutive frames. The motion field is divided into two clusters using k-means...

18/3,K/3 (Item 3 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

00943770 **Image available**

METHOD AND SYSTEM FOR THE ESTIMATION AND COMPENSATION OF BRIGHTNESS CHANGES FOR OPTICAL FLOW CALCULATIONS

PROCEDE ET SYSTEME D'EVALUATION ET DE COMPENSATION DES VARIATIONS DE

LUMINOSITE DANS LES CALCULS DE FLUX OPTIQUE

Patent Applicant/Assignee:
DYNAPEL SYSTEMS INC, 380 Lexington Avenue, Suite 4500, New York, NY 10168-1495, US, US (Residence), US (Nationality)
Inventor(s):
GRIESSL Max, Caracciolastr. 44, 80935 Munich, DE,
WITTKOP Markus, Landskronesweg 1, 85737 Ismaning, DE,
WONNEBERGER Siegfried, Mittermayrstr. 6, 80796 Munich, DE,
Legal Representative:
AITKEN Richard L (agent), Venable, Baetjer, Howard & Civiletti, LLP, 1201 New York Avenue, Suite 1000, P.O. Box 34385, Washington, DC 20043-9998, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200277920 A2-A3 20021003 (WO 0277920)
Application: WO 2002US8841 20020325 (PCT/WO US0208841)
Priority Application: US 2001278443 20010326
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
JP
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
Publication Language: English
Filing Language: English
Fulltext Word Count: 2987

Main International Patent Class: **G06K-009/40**
Fulltext Availability:
Detailed Description

Detailed Description
Method and System for the Estimation and Compensation of Brightness Changes for **Optical Flow Calculations**
Background of the Invention
Field of the Invention
The present invention is directed generally to...

...respect to non-motion brightness changes to improve the estimation of dense motion fields in **sequences** of **images** , such as, e.g. video images, by **optical flow computation** .
RelatedArt
An example of motion estimation by **optical flow computation** is set forth
in application Serial No. 09/593,521, filed June 14, 2000, entitled...

...Max Griessl and Markus Wittkop. This application is hereby incorporated by reference.

Motion estimation by **optical flow computation** between two consecutive **images** of a **sequence** is limited by the fact that the optical flow constraint does not allow for brightness...

18/3,K/4 (Item 4 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00874906 **Image available**
FACIAL IMAGE PROCESSING SYSTEM
SYSTEME DE TRAITEMENT D'IMAGE FACIALE

Patent Applicant/Assignee:
SEEING MACHINES PTY LTD, Innovations Building, Cnr Garren & Eggleston Roads, Acton, Australian Capital Territory 2601, AU, AU (Residence), AU (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
EDWARDS Timothy, 24 Waratah Street, O'Connor, Australian Capital Territory 2602, AU, AU (Residence), AU (Nationality), (Designated only for: US)
HEINZMANN Jochen, 13/22 Archibald Street, Lyneham, Australian Capital Territory 2602, AU, AU (Residence), DE (Nationality), (Designated only for: US)
ROUGEAUX Sebastian, 10 Padbury Street, Downer, Australian Capital Territory 2602, AU, AU (Residence), FR (Nationality), (Designated only for: US)
ZELINSKY Alex, 24 Waratah Street, O'Connor, Australian Capital Territory 2602, AU, AU (Residence), AU (Nationality), (Designated only for: US)
Legal Representative:
FREEHILLS CARTER SMITH BEADLE (agent), Level 32, MLC Centre, 19-29 Martin Place, Sydney, New South Wales 2000, AU,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200209025 A1 20020131 (WO 0209025)
Application: WO 2001AU249 20010308 (PCT/WO AU0100249)
Priority Application: AU 20008960 20000724
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 12669

Main International Patent Class: **G06K-009/46**
Fulltext Availability:
Detailed Description

Detailed Description
... the time period of interest. Motion of the upper eyelid during blinking is detected by **calculating** the vertical **optical flow** in the eye image region and matching it to an expected signal. Optical flow is a well-known tecImique used to compute motion in **sequence** of **images** . Detafis of a suitable **optical flow calculation** are contained in "Determining **Optical Flow** ", Artificial Intelligence Volume 17, pl85-204, 1981 by B Horn et al. The sharp transition...
?

```
? show files; ds; save temp; logoff hold
File   9:Business & Industry(R) Jul/1994-2005/Nov 04
         (c) 2005  The Gale Group
File  15:ABI/Inform(R) 1971-2005/Nov 05
         (c) 2005 ProQuest Info&Learning
File  16:Gale Group PROMT(R) 1990-2005/Nov 07
         (c) 2005 The Gale Group
File  20:Dialog Global Reporter 1997-2005/Nov 07
         (c) 2005 Dialog
File  47:Gale Group Magazine DB(TM) 1959-2005/Nov 07
         (c) 2005 The Gale group
File  75:TGG Management Contents(R) 86-2005/Oct W5
         (c) 2005 The Gale Group
File  80:TGG Aerospace/Def.Mkts(R) 1982-2005/Nov 04
         (c) 2005 The Gale Group
File  88:Gale Group Business A.R.T.S. 1976-2005/Nov 07
         (c) 2005 The Gale Group
File  98:General Sci Abs/Full-Text 1984-2004/Dec
         (c) 2005 The HW Wilson Co.
File 112:UBM Industry News 1998-2004/Jan 27
         (c) 2004 United Business Media
File 141:Readers Guide 1983-2004/Dec
         (c) 2005 The HW Wilson Co
File 148:Gale Group Trade & Industry DB 1976-2005/Nov 07
         (c)2005 The Gale Group
File 160:Gale Group PROMT(R) 1972-1989
         (c) 1999 The Gale Group
File 275:Gale Group Computer DB(TM) 1983-2005/Nov 04
         (c) 2005 The Gale Group
File 264:DIALOG Defense Newsletters 1989-2005/Nov 04
         (c) 2005 Dialog
File 484:Periodical Abs Plustext 1986-2005/Oct W5
         (c) 2005 ProQuest
File 553:Wilson Bus. Abs. FullText 1982-2004/Dec
         (c) 2005 The HW Wilson Co
File 570:Gale Group MARS(R) 1984-2005/Nov 04
         (c) 2005 The Gale Group
File 608:KR/T Bus.News. 1992-2005/Nov 07
         (c)2005 Knight Ridder/Tribune Bus News
File 620:EIU:Viewswire 2005/Oct 19
         (c) 2005 Economist Intelligence Unit
File 613:PR Newswire 1999-2005/Nov 04
         (c) 2005 PR Newswire Association Inc
File 621:Gale Group New Prod.Annou.(R) 1985-2005/Nov 07
         (c) 2005 The Gale Group
File 623:Business Week 1985-2005/Nov 03
         (c) 2005 The McGraw-Hill Companies Inc
File 624:McGraw-Hill Publications 1985-2005/Nov 04
         (c) 2005 McGraw-Hill Co. Inc
File 634:San Jose Mercury  Jun 1985-2005/Nov 05
         (c) 2005 San Jose Mercury News
File 635:Business Dateline(R) 1985-2005/Nov 05
         (c) 2005 ProQuest Info&Learning
File 636:Gale Group Newsletter DB(TM) 1987-2005/Nov 07
         (c) 2005 The Gale Group
File 647:CMP  Computer Fulltext 1988-2005/Oct W4
         (c) 2005 CMP Media, LLC
File 696:DIALOG Telecom. Newsletters 1995-2005/Nov 04
         (c) 2005 Dialog
File 674:Computer News Fulltext 1989-2005/Oct W2
```

File 810:Business Wire 1986-1999/Feb 28

File 813:PR Newswire 1987-1999/Apr 30

File 587:Jane`s Defense&Aerospace 2005/Oct W5

Set	Items	Description
S1	144	(COMPUT? OR CALCULAT? OR ADD?)(3N)OPTICAL?(3N)FLOW
S2	22933	(IMAGE?? OR PICTURE?? OR JPEG?? OR PHOTO?? OR GIF?? OR VIDEO OR PHOTOGRAPH??)(5N)SEQUENCE? ?
S3	30134	POINT(5N)MATCH???
S4	35	(EPIPOLAR OR EPI()POLAR)(5N)GEOMETR?
S5	19	(MIDDLE OR MEDIAN OR MID OR AVERAGE OR MEAN OR MEDIUM OR MIDPOINT OR INTERMEDIATE)(7N)(OPTICAL(3N)FLOW?)
S6	291	FUNDAMENTAL(3N)MATRI???
S7	0	AU=(TRAJKOV, M? OR TRAJKOVIC M)
S8	26	S1(S)S2
S9	0	S8(S)S3
S10	0	S8(S)S4
S11	0	S8(S)S5
S12	0	S8(S)S6
S13	24	RD S8 (unique items)
S14	19	S13 NOT PY>2001

14/3,K/1 (Item 1 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

01134361 97-83755
The computation of optical flow
Beauchemin, S S; Barron, J L
ACM Computing Surveys v27n3 PP: 433-467 Sep 1995
ISSN: 0360-0300 JRNL CODE: ACI

...ABSTRACT: projection of the 3-dimensional motion of objects, relative to a visual sensor, onto its **image** plane. **Sequences** of time-ordered **images** allow the estimation of projected 2-dimensional image motion as either instantaneous image velocities or...

...to-collision and focus of expansion calculations, motion compensated encoding, and stereo disparity measurement. The **computation** of **optical flow** is investigated. ...

14/3,K/2 (Item 1 from file: 47)
DIALOG(R)File 47:Gale Group Magazine DB(TM)

04422074 SUPPLIER NUMBER: 17996950 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Direct proportion of three-dimensional motion from patterns of visual motion.
Fermuller, Cornelia; Aloimonos, Yiannis
Science, v270, n5244, p1973(4)
Dec 22, 1995
ISSN: 0036-8075 LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 3349 LINE COUNT: 00261

TEXT:
...input (2). This difficulty is compounded because the information that can be derived from the **sequence** of **images** sensed by the moving retina is not the exact projection of the 3D motion field...

...of light patterns. The exact movement of every point on the image is termed the **optical flow** field. In general, accurate values of the **optical flow** field are not **computable** ; the so-called normal flow, the component perpendicular to the edges, is the only component...

14/3,K/3 (Item 1 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

05660294 SUPPLIER NUMBER: 68618917
Objective Quantification of the Motion of Soft Tissues in the Orbit.
Abramoff, Michael D.; Niessen, Wiro J.; Viergever, Max A.
IEEE Transactions on Medical Imaging, 19, 10, 986
Oct, 2000
ISSN: 0278-0062 LANGUAGE: English RECORD TYPE: Abstract

...AUTHOR ABSTRACT: coded by hue and magnitude by saturation of the pixel. Current clinical circumstances limit MR **image** acquisition to short **sequences** and short acquisition times. The effect of these limitations on

the performance of **optical flow computation** has been studied for four representative **optical flow** algorithms: on short (nine frames) and long (21 frames) simulated sequences of rotation of a magnetic resonance (MR) **imaged** object, on short measured MR **sequences** of controlled rotation of the same object and on short MR sequences of motion in...

14/3,K/4 (Item 2 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

05642801 SUPPLIER NUMBER: 68914232
Three-Dimensional Trajectory Estimation from Image Position and Velocity.
BLOSTEIN, STEVEN D.; ZHAO, LIN; CHANN, ROBERT M.
IEEE Transactions on Aerospace and Electronic Systems, 36, 4, 1075
Oct, 2000
ISSN: 0018-9251 LANGUAGE: English RECORD TYPE: Abstract

...AUTHOR ABSTRACT: for estimating the three-dimensional trajectory and structure of a moving rigid object in an **image sequence** has been previously developed by Broida, Chandrashekhar, and Chellappa (1). Since then, steady advances have occurred in the **calculation** of **optical flow** . This work improves 3-D motion trajectory and structure estimation by incorporating optical flow into...

...a hybrid feature point/optical flow algorithm, demonstrated through detailed simulation on synthetic and real **image sequences** , significantly lowers bias and mean squared error in trajectory estimation over the feature-based approach...

14/3,K/5 (Item 3 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04784470 SUPPLIER NUMBER: 20609223
RETIMAC: REal-TIme Motion Analysis Chip.
Nesi, Paolo; Innocenti, Fabrizio; Pezzati, Paolo
IEEE Transactions on Circuits and Systems-II: Analog and Digital..., v45, n3, p361(15)
March, 1998
ISSN: 1057-7130 LANGUAGE: English RECORD TYPE: Abstract

AUTHOR ABSTRACT: Motion estimation is relevant for applications of both motion-compensated **image sequence** processing and dynamic scene analysis of computer vision. Different approaches and solutions have been proposed

...

...reliable and precise with respect to several solutions proposed in the literature. Index Terms - ASIC, **computer** vision, motion estimation, **optical flow** estimation, real-time implementation.

14/3,K/6 (Item 4 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04770202 SUPPLIER NUMBER: 20448079
Three-dimensional surface reconstruction using optical flow for medical imaging.
Weng, Nan; Yang, Yee-Hong; Pierson, Roger
IEEE Transactions on Medical Imaging, v16, n5, p630(12)
Oct, 1997
ISSN: 0278-0062 LANGUAGE: English RECORD TYPE: Abstract

AUTHOR ABSTRACT: The recovery of a three-dimensional (3-D) model from a **sequence** of two-dimensional (2-D) **images** is very useful in medical **image** analysis. **Image sequences** obtained from the relative motion between the object and the camera or the scanner contain...

...2-D image. The 3-D motion of an object can be recovered from the **optical - flow** field using **additional** constraints. By extracting the surface information from 3-D motion, it is possible to get an accurate 3-D model of the object. Both synthetic and real **image sequences** have been used to illustrate the feasibility of the proposed method. The experimental results suggest...

...for the reconstruction of 3-D models from ultrasound medical images as well as other **computed** tomograms. Index Terms - Motion analysis, **optical flow** , surface reconstruction, ultrasound imaging.

14/3,K/7 (Item 5 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04595940 SUPPLIER NUMBER: 20074984
Computation of optical flow using basis functions.
Rakshit, Subrata; Anderson, Charles H.
IEEE Transactions on Image Processing, v6, n9, p1246(9)
Sep, 1997
ISSN: 1057-7149 LANGUAGE: English RECORD TYPE: Abstract

ABSTRACT: **Computation** methods to estimate **optical flow** in **image sequences** are described. Modifications to Horn's algorithm illustrates the impact image representation has on accuracy and computation. Images which have been resampled at twice the Nyquist rate reduces **computation** cost in **optical flow** estimations. Good results are achieved using a multiresolution basis function and information encoding.

14/3,K/8 (Item 6 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04176398 SUPPLIER NUMBER: 19129077
Multiple constraints to compute optical flow.
Tistarelli, Massimo
IEEE Transactions on Pattern Analysis and Machine Intelligence, v18, n12, p1243(8)
Dec, 1996
ISSN: 0162-8828 LANGUAGE: English RECORD TYPE: Abstract

AUTHOR ABSTRACT: The **computation** of the **optical flow** field from an **image sequence** requires the definition of constraints on the temporal

change of image features. In this paper...

...velocity field. Moreover, by hypothesizing a constant acceleration motion model, also the derivatives of the **optical flow** are 1computed . Several experiments are presented from real **image sequences** . Index Terms - Optical flow, velocity field, differential constraints, dynamic vision, motion analysis, image velocity, dynamic...

14/3,K/9 (Item 7 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04004399 SUPPLIER NUMBER: 18498956
Evaluation of differential optical flow techniques on synthesized echo images.
Baraldi, Patrizia; Sarti, Alessandro; Lamberti, Claudio; Prandini, Alessandro; Sgallari, Fiorella
IEEE Transactions on Biomedical Engineering, v43, n3, p259(14)
March, 1996
ISSN: 0018-9294 LANGUAGE: English RECORD TYPE: Abstract

AUTHOR ABSTRACT: The performance of three methods for evaluation of motion on synthesized 2-D echo **image sequences** with features similar to real ones are examined. The selected techniques based on the **computation** of **optical flow** are of the differential type and assume that the image brightness pattern is constant over...

14/3,K/10 (Item 8 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

03962523 SUPPLIER NUMBER: 18510558
Recognizing human facial expressions from long image sequences using optical flow.
Yacoob, Yaser; Davis, Larry S.
IEEE Transactions on Pattern Analysis and Machine Intelligence, v18, n6, p636(7)
June, 1996
ISSN: 0162-8828 LANGUAGE: English RECORD TYPE: Abstract

...AUTHOR ABSTRACT: approach to the analysis and representation of facial dynamics for recognition of facial expressions from **image sequences** is presented. The algorithms utilize **optical flow computation** to identify the direction of rigid and nonrigid motions that are caused by human facial...

...six facial expressions, as well as eye blinking, is demonstrated on a large set of **image sequences** . Index Terms - Face expression recognition, non-rigis motion analysis, optical flow, tracking.

14/3,K/11 (Item 9 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

03960249 SUPPLIER NUMBER: 18504184

Optical flow: a curve evolution approach.
Kumar, Arun; Tannenbaum, Allen R.; Balas, Gary J.
IEEE Transactions on Image Processing, v5, n4, p598(13)
April, 1996
ISSN: 1057-7149 LANGUAGE: English RECORD TYPE: Abstract

ABSTRACT: A curve evolution method **computes optical flow** from the **sequence** of **images** using an L(super 1)-norm type minimization of the flow vectors. The norm minimization...

...not smoothed and the edge information is retained. The application of the approach to standard **image sequences** is discussed, along with a comparison to the Horn and Schunk approach.

14/3,K/12 (Item 10 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

03265331 SUPPLIER NUMBER: 15301721
Efficient multiscale regularization with applications to the computation of optical flow.
Luettgen, Mark R.; Karl, W. Clem; Willsky, Alan S.
IEEE Transactions on Image Processing, v3, n1, p41(24)
Jan, 1994
ISSN: 1057-7149 LANGUAGE: English RECORD TYPE: Abstract

ABSTRACT: An efficient multiscale algorithm is used to **compute** a solution for the dense **optical flow** field problem in an **image sequence** used in regularization methods for **image** processing. The noniterative algorithm has a per pixel computational complexity that does not depend on image size. Application of this algorithm on **image sequences** results in considerable computational savings.

14/3,K/13 (Item 11 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

02061556 SUPPLIER NUMBER: 06539707
A projection operator for the restoration of divergence-free vector fields. (Correspondence) (technical)
Simard, P.Y.; Mailloux, G.E.
IEEE Transactions on Pattern Analysis and Machine Intelligence, v10, n2, p248(9)
March, 1988
DOCUMENT TYPE: technical ISSN: 0162-8828 LANGUAGE: English
RECORD TYPE: Abstract

...ABSTRACT: to illustrate the performance of this new projection. This projection operator restores velocity field or **optical flow computed** from an **image sequence** when the real velocity field is a priori known to be divergence free.

14/3,K/14 (Item 1 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

01470318 SUPPLIER NUMBER: 12517698
Motion analysis from first-order properties of optical flow. (Technical)
Campani, Marco; Verri, Alessandro
CVGIP: Image Understanding, v56, n1, p90(18)
July, 1992
DOCUMENT TYPE: Technical ISSN: 1049-9660 LANGUAGE: ENGLISH
RECORD TYPE: ABSTRACT

...ABSTRACT: the image plane using a linear vector field. Also discussed is a method in which **optical flow** is **computed** as a piecewise linear vector field. Different kinds of motion can then be distinguished using...

...are obtained. Also covered are the results of several experiments dealing with a variety of **sequences** of real **images** . Pointwise flow estimates are used as the basis for the methods used which leads to...

14/3,K/15 (Item 2 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
(c) 2005 The Gale Group. All rts. reserv.

01235453 SUPPLIER NUMBER: 07059399
On the computation of motion from sequences of images - a review. (technical)
Aggarwal, J.K.; Nandhakumar, N.
Proceedings of the IEEE, v76, n8, p917(19)
Aug, 1988
DOCUMENT TYPE: technical ISSN: 0018-9219 LANGUAGE: ENGLISH
RECORD TYPE: ABSTRACT

ABSTRACT: Two major approaches have been developed for the computation of motion from **sequences** of **images** , feature-based and optical-flow approaches. Such techniques for the sensing, analysis and description of...

...object features from each image and establish inter-frame serial correspondence between these features. The **optical - flow** approach involves **computing** the two-dimensional field of instantaneous velocities of gray levels in the image plane and...

14/3,K/16 (Item 3 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
(c) 2005 The Gale Group. All rts. reserv.

01046604 SUPPLIER NUMBER: 00561564
Computation **of** Optical Flow **from the Motion of Edge Features in** Image Sequences .
Buxton, B.F.; Buxton, H.
Image and Vision Computing, v2, n2, p59-75
May, 1984
ISSN: 0262-8856 LANGUAGE: ENGLISH RECORD TYPE: ABSTRACT

Computation **of** Optical Flow **from the Motion of Edge Features in** Image Sequences .

ABSTRACT: A method for **computing** the **optical flow** from the motion of edge features in **image sequences** is presented. A review on **calculating**

optical flow is given. The proposed method is based on a spatiotemporal extention of the Marr-Hildreth...

...that accurate vernier velocities or optical flow vectors can be obtained from moving features in **image sequences** by low level processing. It is also shown that the vernier obtained is useful in...

14/3,K/17 (Item 1 from file: 484)
DIALOG(R)File 484:Periodical Abs Plustext

03657009
The use of optical flow for road navigation
Giachetti, Andrea; Campani, Marco; Torre, Vincent
IEEE Transactions on Robotics & Automation (ERAU), v14 n1, p34-48, p.15
Feb 1998
ISSN: 1042-296X JOURNAL CODE: ERAU
DOCUMENT TYPE: Feature
LANGUAGE: English RECORD TYPE: Abstract

ABSTRACT: This paper describes procedures for obtaining a reliable and dense optical flow from **image sequences** taken by a television (TV) camera mounted on a car moving in usual outdoor scenarios. The **optical flow** can be **computed** from these **image sequences** by using several techniques.

14/3,K/18 (Item 2 from file: 484)
DIALOG(R)File 484:Periodical Abs Plustext

02685160 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Direct perception of three-dimensional motion from patterns of visual motion
Fermuller, Cornelia; Aloimonos, Yiannis
Science (GSCI), v270 n5244, p1973-1976
Dec 22, 1995
ISSN: 0036-8075 JOURNAL CODE: GSCI
DOCUMENT TYPE: Feature
LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 3157 LENGTH: Long (31+ col inches)

TEXT:
... input (2).
This difficulty is compounded because the information that can be derived from the **sequence** of **images** sensed by the moving retina is not the exact projection of the 3D motion field...

...of light patterns. he exact movement of every point on the image is termed the **optical flow** field. In general, accurate values of the **optical flow** field are not **computable** ; the so-called normal flow, the component perpendicular to the edges, is the only component...

14/3,K/19 (Item 3 from file: 484)
DIALOG(R)File 484:Periodical Abs Plustext

00328953

A Parallel Algorithm for Real-Time Computation of Optical Flow

Bulthoff, H; Little, J; Poggio, T

Nature (GNAA), v337 n6207, p549-553, p.5
Feb 9, 1989
ISSN: 0028-0836 JOURNAL CODE: GNAA
DOCUMENT TYPE: Feature
LANGUAGE: English RECORD TYPE: Abstract
LENGTH: Long (31+ col inches)

...ABSTRACT: compute suitable optical flows that are similar to the velocity field. A simple algorithm that **computes** an **optical flow** from **sequences** of real **images** is presented.

?

```
? show files; ds; save temp; logoff hold
File 256:TecInfoSource 82-2005/Jan
         (c) 2005 Info.Sources Inc

Set    Items    Description
S1         1    (COMPUT? OR CALCULAT? OR ADD?)(3N)OPTICAL?(3N)FLOW
S2        76    (IMAGE?? OR PICTURE?? OR JPEG?? OR PHOTO?? OR GIF?? OR VID-
              EO OR PHOTOGRAPH??)(5N)SEQUENCE? ?
S3         8    POINT(5N)MATCH???
S4         0    (EPIPOLAR OR EPI()POLAR)(5N)GEOMETR?
S5         0    (MIDDLE OR MEDIAN OR MID OR AVERAGE OR MEAN OR MEDIUM OR M-
              IDPOINT OR INTERMEDIATE)(7N)(OPTICAL(3N)FLOW?)
S6         0    FUNDAMENTAL(3N)MATRI???
S7         0    AU=(TRAJKOV,  M? OR  TRAJKOVIC M)
S8         0    S1(S)S2
S9         0    S2(S)S3
```